

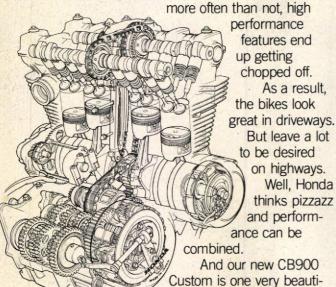




INTRODUCING ACCUSTOM UNLIKE ANYTHING YOU'RE ACCUSTOMED TO.

THE CB900 CUSTOM.

The trouble with many customized motorcycles you see is that in an effort to achieve a "chopper" look,



Like all the Honda Customs,

it's obviously a looker. Teardrop gas tank, pullback handlebars, contoured stepped seat, four upswept shorty mufflers, wide rear tire, slick side covers, trick ComStar™ alloy wheels and chrome, chrome, chrome.

ful example.

But the CB900 Custom is more than just another pretty face.

Beneath that stunning, customized finish is enough advanced engineering to make even a hardcore enthusiast enthusiastic.

For starters, a transistorized pointless inductive ignition system. No points, no condenser, all electronic. So you can count on lightning quick starts, and light maintenance, too.

It fires an engine that's been tested in the toughest laboratory of all. The European endurance circuit. The 901.8 cc design was raced and refined by Honda's successful RCB road racing team. Four cylinders, 16 valves, DOHC, patented Pentroof™ combustion chambers for more efficient burn, and a forged one-piece crankshaft

with replaceable CBX-type Kelmet bearings, all contribu'e to a powerplant that is, modestly, sensational.

This formidable four-stroke transmits torque into a five speed transmission, then

smoothly on again through a shaft drive. A shaft that's fully enclosed and made even smoother with an in-line

But shaft drive is not the final word in this power

train. You can change ratios with this shafting. The CB900 Custom is the only shaft driven production motorcycle in the world to have a dual ratio final drive. A low



range for easy cruising on the boulevard, and a high range when you want to turn a cruise into a tour. Five gears and dual drive give you ten forward speeds.

By now, you're probably beginning to realize that there's very little about this

motorcycle that's average or ordinary. And the suspension is no exception. In the front, air-assisted forks with two

special low-friction bushings reduce stiction and increase responsiveness. In the rear, air-adjustable shocks offer similar control over both the road and the load. And pressure equalizers, front and rear, simplify filling.

Yet even when it's outfeatured most other bikes, customized or otherwise, the beauty of this bike is that it still has more features.

Four 32 mm constant-velocity carburetors with an accelerator pump. Triple disc brakes. Double-cradle tubular frame. Tapered roller bearing steering



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Motorcyclist IS NOW MOTOR EYELIST

We changed our logo to achieve a bolder, more modern look which corresponds with improvements to the inside as well. Modeling: Cox & Vreeke. Photo by Dale Boller

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EDITORIAL

THE BEST KEPT SECRET IN MOTORCYCLING

he plan was routine: rendezvous at The Corral for breakfast; bust over Sand Canyon to see how they handle; measure top speed on one of the long desert straightaways; switch bikes; shoot photos; find more twisties. It was a typical street bike testing schedule that we'd all experienced many times before. But there would be something very different today.

The bikes were two Suzuki GS450s, a Honda Hawk, and—because we were feeling very tolerant, and because it needed photos for its story—a Suzuki TS250 street-legal two-stroke with trials universal tires. In other words, a boat anchor. Having this dual-purpose bike along with the fastest lightweights in the world wasn't particularly appealing for we knew it would be hurry-up-and-wait all day long.

Sand Canyon would make a plate of spaghetti seem well ordered. It dives and twists and curls over an entire mountain range from the San Fernando Valley to the Antelope Valley. Since a giant freeway does the same thing without curves, Sand Canyon is practically deserted—a perfect place for the Motorcyclist strafing crew.

The road doesn't begin its serious contortions until about four miles from The Corral, so there's a few minutes to build rhythm. Everyone was wondering as we approached the canyon how long it would take the TS250 to seize its two-stroke engine or lose its knobby-tired grip on the asphalt. One or the other was bound to happen if it tried to keep up with the madmen on the 450s and the Hawk. These riders were, afterall, experienced roadracers on superior machinery.

A 450 took the lead and set a brisk pace. All three trailing bikes tucked close behind it as if to draft. The inevitable race had begun. The lead Suzuki immediately downshifted and the tach needle shot clockwise. Pegs and pipes began gouging the pavement. Forks bottomed with a clang as calipers gripped discs. Armco barriers slipped by with their spray-painted messages a blur: Pedro Loves Maria, Stop Disco, The Ayatolla Wears Panty Hose.

Confident that this torrid assault had

spread the pack and most certainly humiliated the TS250, the lead rider glanced in his mirror. NO. It couldn't be true. That lowly dual-purpose bike, that half-dirt half-street mechanical hermaphrodite with knobby tires was keeping up. Impossible.

But true. At the top of Sand Canyon the TS250 was still keeping up. It hadn't seized and its tires hadn't let go. Its rider was confident and giggling, not terrified and reciting a rosary. The GS450s and Hawk had gone 90 percent and the TS250 had kept up.

How could this be? Well, for many years there have been indications that dual-purpose bikes might actually be better than their compromised nature indicates. Can-Am TNTs have won many a roadrace. Everybody has praised the street handling of Honda's XL500. But to our knowledge no one has pitted a machine such as the TS250 directly against pure street bikes, so no one has discovered how good dual-purpose bikes really are-even with a nearly 50 percent displacement handicap. Admittedly, Sand Canyon is tight, and the man who piloted the TS is an exceptional rider, so the average guy on a faster road wouldn't always be hugging street-bike taillights with his enduro bike. But on a machine most people thought was only 50 percent as good as a street bike (because it was half dirt-bike), the average rider can enjoy performance that we feel is 80 percent of most street bikes of the same size. Sure, he won't have equal comfort or smoothness or braking or range, but he'll have the option of going home on a dirt road. And because dual-purpose bikes cost less, he'll have a lot more money in his pocket.

Dual-purpose sales have been down during the last couple of years, possibly because people don't know how good the bikes really are. Well, the secret's out. They're great! In a few years when people will be hard-pressed to afford \$2000 off-road playbikes or are stuck without enough fuel to haul their dirt bikes to the dirt, it's nice to know there's a versatile alternative that can go from garage to dirt and back again at 60 mpq.

—Dale Boller

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STEET STOZET



HOTLINE

IRIMAJIRI OUT?

Soichiro Irimajiri, the man behind the Honda multis, the engineer who put the funny little Japanese company on the motorcycling map, may finally have met his Waterloo. Strong rumors circulating in Japan say Honda's new go at GP racing with Irimajiri's baby, the NR500, was allegedly so humiliating to top brass—the machine wasn't even allowed on the starting line at the French GP, it ran so slow trying to qualify—that they want to see his head roll from a chopping block.

Irimajiri himself isn't talking-to anyone. A Japanese journalist, longtime friend of the great engineer, ran into him by chance recently at a local race and only got a grunt in greeting and a clear view of his receding back when he began to ask questions. Sources who should know told us the Honda head honchos are fighting over which is more important to the company: cars or motorcycles. With the seeming disaster of the NR500, an immensely costly and publicly embarrassing disaster, the car people have been immeasurably strengthened in their apparent fight to wrest the handlebars steering the company from the bikers, and substitute a steering wheel.



Irimajiri's NR500: End of an era?

THOSE WERE THE DAYS

Back in August, 1929, era of bathtub gin, booming business, rumble-seat roadsters and ten-cent-a-gallon gasoline, Lamp, official publication of Standard Oil New Jersey, worried editorially about the runaway overproduction of crude oil from American fields—then averaging some 5,000,000 excess barrels a month—and the equally devil-may-care over-refining of gasoline—running 26 percent above consumption, and resulting that year in 352,800,000 gallons sitting around evaporating in above ground storage tanks unsold and unsaleable.

In response to Standard Oil's warning of the folly of wasting our oil reserves, the president of the American Petroleum Institute hurried to reassure the industry and the nation that, "the immense natural resources of petroleum will be conserved for the use of generations of our people beyond the power of the present generation to estimate." In the light of recent history, the API's ancient utterance appears a very grim miscalculation.

A SHRED OF HOPE FOR THEFT VICTIMS

The AMA's magazine, American Motorcyclist, publishes a list monthly of motorcycles stolen from AMA members. The list contains a description of the motorcycle, license plate and serial numbers. It's a good idea. If you've got big bucks invested in a cherished machine, it might be worth the membership fee to join the AMA for this service.

BIKE GIVEAWAY CONTEST FROM MXL

National Hydron has announced a contest to give away a motorcycle—or snowmobile, if you'd rather have one of those—of the winner's choice (retail value up to \$3000). Just mosey down to your local Hydron/MXL dealer, get your hands on a header card from a pair of Hydron Cold Weather Gloves, print your name, address and telephone number, along with that of the dealer and pop it in the mail addressed to the Hydron boys before March 31, 1980. Cross your fingers, go home and wait. Good luck.

FUEL INJECTION AND BELTDRIVE FOR KAWA

Kawasaki might be struggling for their share of the market, but that hasn't stopped their technical minds from working overtime. Kawasaki reps just informed us that their lightweight street twin, the KZ400, has been boosted to a 440cc displacement this year and there will be a belt driving the rear wheel instead of the customary chain. It's said that the one-inch-wide, toothed belt (made of a composite of synthetic material) is quieter and smoother than a conventional chain and provides a better

cushioning effect in the driveline. Kawasaki claims the belt will not stretch more than 2mm and will only require adjustment twice: once at 400 miles and then at the 1000-mile mark, after that you can forget about it. The belt supposedly has a tensile strength exceeding 8000 pounds and should have the life expectancy of a normal chain.

We know many manufacturers have fuel injection on their minds, Yamaha being the first to produce a working facsimile on their prototype four-stroke GP racer. However, from all indications it will be Kawasaki who will beat everyone to the showroom. Yes, later this year there's a very good possibility that Kawasaki will spring some very wild-looking KZ1000 "Specials" fitted with fuel injection. We don't know the mechanical details, but our sources informed us that it's a real "sano" looking setup.

FEDERAL EMPLOYEES GET FREE PARKING FOR MOTORCYCLES

In a temporary regulation effective through August 15, 1980 the U.S. General Services Administration will exempt two-wheeled vehicles from parking charges in federal garages and buildings. Agencies are instructed to reserve areas for the parking of bicycles and other two-wheeled vehicles "subject to the availability of satisfactory and secure space and facilities." The regulation will affect some three million federal employees and is intended to comply with national energy conservation policies.

WHEELIE KING LOSES WHEELS

Wheelie King Doug Domokos was more than a little shocked the morning after his dazzling performance at the Sears Point Trans-USA. His Toyota truck, packed with personal effects, riding gear, tools and his specially prepared Kawasaki KX250 had vanished from the motel parking lot. Apparently the wheelie-bound thieves forced the door lock, hot-wired the ignition and slipped unnoticed into the night. They missed Domokos' KZ1300, which he had removed from a trailer behind the truck and chained to a nearby tree.

FUEL FROM A TREE

A recent conference of the American Chemical Society heard an almost unbelievable—but true—story out of Brazil: in the wilds of the Amazon rain forests flourishes a tree called the copa-iba which, when tapped like a maple tree

pours forth a lovely amber liquid that analysis has revealed is pure diesel fuel. Absolutely true. Tests have shown you can take the "sap" directly out of the tree, pour it into the tank of your Mercedes 300D and drive off. A full-grown tree drips out about five gallons of sesquiterpene hydrocarbon nectar in two hours from one bung hole, without the aid of an oil company. University of Southern California researchers have imported 2000 copa-iba seedlings for an experimental diesel plantation. Apparently you should be able to refine gasoline from the fluid the tree produces. One problem: Brazil has been actively axing its rain forests in the name of modernization. That country has no Endangered Species Act to protect such in-the-way organisms as the furbish lousewort. Or the copa-iba tree. It's endangered.

JUST LEAVE US ALONE

Ever heard the argument that if motor-cycling becomes more popular, the increased numbers of riders will cause police and law-makers to treat us with more respect? We've never put any faith in that theory. After all, the original reason given by the EPA for its regulation of motorcycle emissions was that impending fuel shortages would make bikes much more popular and, therefore, a smog-source worthy of regulation. Of course, motorcycles never became as popular as predicted, but we have the regulations anyway. And just wait until 1982 when emission standards get tougher.

Closer to home, two riders have told us of being stopped by California Highway Patrol officers who told them of a semi-official clamp-down on motorcyclists. These riders were told that even the smallest infraction was reason for a ticket. Why? The 1979 fuel shortage brought a large increase in motorcycle accidents, almost all of them from a comparatively small number of inexperienced riders who started riding to beat the crunch. More isn't always merrier.

NUTS TO YOU TOO, ACE

Teddy Mondale, son of Vice-President Mondale, but otherwise of no particular consequence except for the fact he used to ride motocross and was featured in American Motorcyclist not too long ago, kissed off his former motorcycling comrades when he joined a PR firm recently. The AMA's Government Report quotes Teddy-baby as saying his new job would help in "... cleaning up my act and getting away from all those tattooed burns who ride bikes " Ted's old man, Walter, you may recall, supported Joan Claybrook's antics as whip-cracker at our beloved NHTSA when other people were covering their eyes and muttering helplessly over and over again, "No, no





QUALIFIED?

I'm Russ Collins and I figure that's the big question when you're looking at high performance exhaust systems. Do the guys who make them know what they're doing? Did they pay their dues? Are they qualified?

Are they making total performance systems? Or are they just bending tubes.

For over 20 years now, high-performance has been our living. Back in 1969 we built the first 4-into-1 collector system for a motorcycle. And

it's gone on to include a string of Team R.C. records the other guys would like to match. If they knew how.

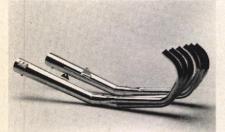
Total performance means more than a system that looks good, or sounds trick. It means increased horsepower. Improved fuel efficiency. Reliability. Quality. And compatibility with the full range of R. C. high performance equipment, including big bore kits, cams and valve springs, rods, clutches, carbs,

ignition systems and the list goes on.

Qualified? Damn straight we're qualified. We'll run our products heads up with anyone. Anywhere. Anytime. That's what made Team R. C. —Teson/Bernard, Vance/Hines, Russ Collins and The Sorcerer.

If you own a high performance motorcycle, you want a true high performance system. And that's all we make.

Join the only team that's qualified. Join R.C.



R.C. HONDA CBX 6-into-2 COLLECTOR EXHAUST SYSTEM

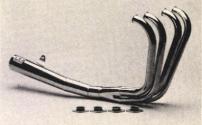
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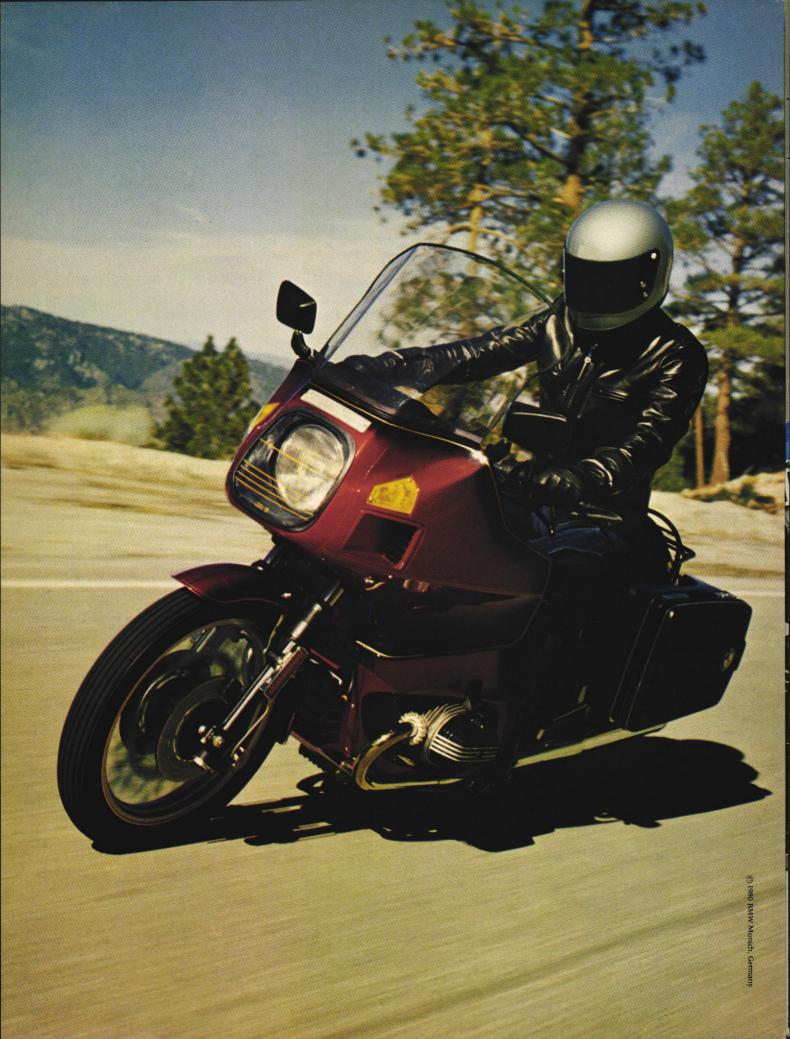
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R100 RT represents a new light-weight, road-worthy plateau in bike riding. Admittedly high priced but, in the long run, one of the least expensive ways to go places.



The invisible

benefits of owning a BMW.

A few famous facts about this BMW R100 RT, at left, are apparent. And, like all things built

to last, many are not.

Its unique, instantly recognizable integrated fairing, unlike "add-on" fairings, is engineered to be part of the total bike design—the weight distribution, suspension, even the braking characteristics of this R100 RT. An invisible but mighty road advantage.

The luster of this BMW's hand-striped, hand-"smoked" Red Smoke finish is also obvious. The special high temperature baking method that helps keep it lustrous for

many years is not.

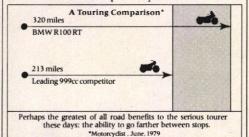
Nor are the special touring features such as a windscreen precisely adjustable to your riding stance. Or the unique rubber fork boots that seal off wind and road moisture.

Or the many luxuries, such as the custom designed BMW saddlebags, that are standard with this R100 RT.

Long Ride. Long Warranty.

"Twelve months, unlimited mileage" is an unsurpassed reassurance. Though, for a marque that has a "200,000 mile club" of owners, it seems only natural.

The fact that BMW never loses its individuality or its value in its owners' estimation is indeed the quality those



BMW owners prize above all. It's a definite departure from the ordinary.

BMW. As well as a sense that you've really arrived.

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LETTERS

STILL ALIVE

Ken Scheinker wrote to you about his first love... everybody's first love... the love of life. Without life, there would be no motorcycle enthusiasts.

To be honest, I never knew of any lid laws. Some of us have learned the hard way. Others, like Ken and myself, (among countless others, I'm sure) have had to learn the very hard way.

And something else I learned through my crash: taking drugs is a slow form of suicide. When I was 17, 18 and one month into my 19th year of life, I took lotsa drugs...then "go for a ride."

One time I took a ride on the freeway, high as the sky, but I had to cut it short. I wiped it all over the freeway. Without a helmet on. That might be why I was in a coma for four days, got 30 or 40 stitches, spent two months being "inhuman," and more or less just about died. That was two years ago and my brain injury still hangs with me today. All I can do is blame it on drugs. I ODed and I was on a motorcycle at that instant. Since then I've learned that drugs won't make a man feel real happy to be alive ... bikes will.

Bikes are freedom, bikes are happiness, bikes are strength, bikes are truth

Still Alive West L.A., CA

50¢, 75¢, \$1.00, \$1.25

I really enjoyed your article in the December issue entitled Ten Years After. However, I think you guys overlooked one item that definitely should have made it into the section titled, "18 Things That Would Have Seemed Impossible In 1969."

Here it is ... paying \$1.25 for a motorcycle magazine. How did you ever miss this one?

Mike Downing Severna Park, MD

Since the various motorcycle magazines have a reciprocal exchange agreement, we haven't bought a bike book recently. Do they really cost \$1.25?—Ed.

WORST BIKES OF THE DECADE

Fun's fun but your "Five Worst Bikes of the Decade" suffers from a credibility gap which Evel Knievel couldn't hurtle in his prime. Perhaps you were trying to deal with the recognizable rather than the totally (and deservedly) forgotten examples, such as the Montgomery Ward's "Mojave" 360, the BSA 441 single models (fool's gold Gold Stars) or the Bridgestone 350 remnants. Granted, the Mojave was more circa 1968 than 1969 but

how could you omit the original Yamaha 750 twin—the all-time Oriental Edsel? And what about the BSA, Triumph DOHC 350 models? They were "bad" because they never materialized, leaving some anglophiles with mixed feelings and much chagrin. Ditto the Yankee 500 and fans of U.S. innovation.

It's really bullying to pick on the CM185T which, at least, has never pretended to be more than it is—entry level cycling. The Honda 500T wasn't as bad as you suggest and was pretty good value for the money. Again, it didn't claim to be a superbike.

Pat Halstead Seattle, WA

IN DEFENSE OF THE 500T

Motorcyclist, you poor misguided dolts. How on earth could you rate the Honda CB500T as one of the five worst bikes of the decade?

The 500T was not outdated or overbored. As far as vibration is concerned, I'd rather live with it than clutter up the crankcase with Mickey Mouse counterbalancers. Bone stock, the 500T was a rather poor performer. By simply removing the air intake from under the saddle, I got a remarkable increase in mileage (48-50), and then went out and humbled every Japanese twin in each of its class, including the Yamaha 650. With the addition of a set of Dunlop K-81s, the 500 could handle with the best of them.

As far as 250 miles in between tuneups goes, your brilliant staff must have done their own tune-up work.

Go back and re-read your comments about the 500T, and you will see that they perfectly describe big-bore Harleys. Are you sure that there wasn't a misprint?

Joe Bradley Wabash, IN

IN DEFENSE OF THE SPRINT

Re: "Five Worst Bikes of the Decade": I am the exception to the rule on page 45 of your December issue. I am the proud owner of a 1973 SX-350 Harley Davidson Sprint. I personally have logged 8000 miles on it, my dad has put over 12,000 miles on it and still is going strong. I don't know what it is but magazine people have to knock Harleys. I also am the proud owner of a 1977 XL-1000 Sportster. So you can see why I am very skeptical about the Harley Sprint being one of the lemons of the decade.

I realize Harleys can't compete in every category with other motorcycles, but the two most important factors are that people continue to buy them, whatever their reasons, and secondly my dealer, Dudley Perkins of San Francisco, gives me a fair shake and treats me like a person.

I had considered buying a Japanese bike but for about \$1000 more, I bought another Harley. I have both bikes serviced at regular 1000-mile intervals and have had no trouble with them. In 1973 I paid \$1050 for the SX-350 Sprint and in 1977 for the Sportster I paid \$3390. In both cases I can say I got a good deal; all you have to do is look at prices nowadays.

Anyway, thanks for hearing me out and please don't be too critical on all of us Harley riders and their machines.

David J. Canada Daly City, CA

ANOTHER STRANGE CRASH

I'm going to have to dispute your "Strangest Crash of the Decade." I had it just last week at an AFM roadrace at Riverside International Raceway. Going out for the first practice of the day on my 125, the bike handled perfectly until I got to turn six. The bike took a nosedive, shook its head and went toward the inside of the track. I tried to hold the line but went into the warning bumps on the inside of the turn. I went down with the bike on the right side. It spit me off and ran over my leg. I got to my feet in time to see that the bike had righted itself, continued up the hill on its own power, and turned around at the crest and started to come back. When the corner workers saw it come back, two of them started toward it, but right as they got to it, it fell over. It was witnessed by at least eight people.

If that wasn't strange enough, I discovered that the front tire had gone flat. When I got back to my van, I inflated it to find out where it was leaking and it is still holding 36 psi after a week. Strange?????

Mike Seifert San Diego, CA

B.R.O. of B.C.

This is just a brief letter to let you know that Bikers Rights Organization of British Columbia has a current official address: Biker's Rights Organization, 6557 Willingdon Ave., Burnaby, B.C. V5H 2V7, Canada.

B.R.O. is dedicated to responsible motorcycle legislation. We strive to make our political leaders realize that Motorcycles Use Less Of Everything.

> Pat Allen, President Burnaby, B.C., Canada continued on page 95

ACCESSORY SHOP

RAVEN INDUSTRIES, INC. has expanded its line of sportswear to include this one-piece winter suit. It features a water repellent outer shell and warm Dupont Dacron Hollofil insulation to fend off winter's chill. The suit is cut



large enough to allow room for clothes underneath. Each leg has a full-length zipper to avoid the hassle of removing shoes or boots. The front zipper is concealed by a weather repellent storm flap that extends up to the zip-tight collar. The suit is available in black, navy, electric blue, brown, red and spruce. Men's sizes are S, M, ML, L, XL and XXL while women's sizes are S, M, L, and XL. Prices range from \$65-75 from Raven Sportswear Division, Raven Industries, Inc., P.O. Box 1007, Sioux Falls, SD 57101.

Thanks to the people at BROOKS LEATHER SPORTSWEAR you can now savor that cop-look all year round with their updated police jacket. The Orlon-pile lining now zips out so you can wear the jacket through the summer. It still retains the traditional belted waist, inside hidden stash pocket and full action back. The jacket is hand-cut and double-stitched at all seams to



withstand rough riding, rumbles or riot control and comes in black, brown and buckwheat, sizes 36-48. \$174 from your Brooks dealer or contact Brooks Leather Sportswear, Dept. MC, 14511 W. 11 Mile Rd., Oak Park, MI 48237.

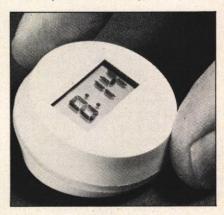
Silicone is popular for its high resistance to temperature changes and water repellent characteristics. It has been used successfully in lubricants, resins and polishes, but now YANKEE SILICONES, INC. has given this magic organic compound a motorcycle use. They have developed a silicone-based brake fluid that is completely innocuous and won't harm plastics or paint. It



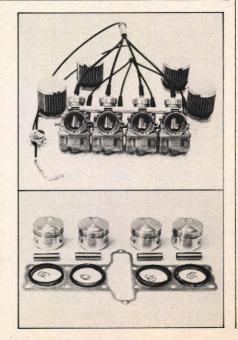
exceeds D.O.T. high-temp standards and not only fights heat breakdown during hard braking, but also repels water, eliminating moisture contamination and combating brake system corrosion. The 8-ounce size is \$4.75; 12-ounce, \$6.50; 1-quart, \$15.50; 1-gallon, \$57.75 and family size 5-gallon barrel, \$275.95 from Yankee Silicones, Inc., Dept. MC, P.O. Box 1089, Schenectady, NY 12301.

If the shoulder-stooping torque and wide-eyed acceleration of your XS Eleven doesn't quite satisfy your lust for power, SPECIALISTS II has a 1216cc big-bore kit that will put an end to your mad craving. The kit is said to deliver monstrous power increases throughout the powerband along with even more low-end grunt. It is available with cast pistons at 9.1:1 for \$160 or forged pistons with 10 thru 12:1 ratios for \$260.95. Both kits can be installed using the stock sleeves and come complete with head gaskets, wrist pins, rings and circlips. Specialists II recommends installing a set of their 34mm Mikuni slide needle carbs (\$320) for maximum performance. The carb kit smooths out throttle response and eliminates much of the surging caused by the sensitive CV carbs. For more information contact Specialists II, Dept. MC, 102 E. Prospect Ave., Burbank, CA 91502.

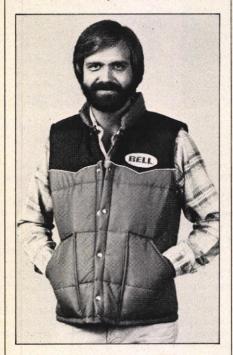
Trying to read your watch while negotiating a busy highway is sometimes tricky and digging under your gauntlet to catch a glimpse of ol' Mickey could even be deadly. But a company called STIK TIME has come out with a constant readout quartz digital clock designed to cope with this situation. It's about 1.5 inches in diameter and comes with two strips of adhesive-backed Velcro so you can mount it almost anywhere and still pocket it when



you leave your bike. A screw is supplied for more permanent mounting. The two-piece outer casing features shock resistant qualities and an angled face for optimum viewing. An adjustment in the back can lock the clock into both time and date readouts which alternately flash every second, or time only can be made to read out constantly. The clock comes in black, brown, blue, avocado, orange, red, white, or yellow with a full 90-day warranty for \$24.95 plus \$1 for shipping. Contact Stik Time, Dept. MC, 1252 Alderwood, Sunnyvale, CA 94086.



BELL HELMETS, INC. introduces this Western style vest to help protect you from the winter of 1980. It fits easily under a jacket and can be compactly folded and tucked away when the sun comes out. The nylon material is fiber-



filled and colored in bright red and black. It retails for \$24.95 and comes in sizes XS, S, M, L and XL from your Bell dealer or contact Bell Helmets, Inc., Dept. MC, 15301 Shoemaker Ave., P.O. Box 1020, Norwalk, CA 90650.

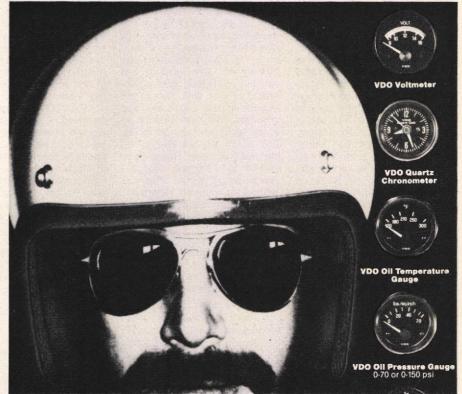
Your favorite lady will love HARLEY'S new nightie which says, "Nothing Handles The Curves Like A Harley-Davidson." The warm winter nightie is made



of 100-percent cotton and comes in black only. Sizes are S, M, L, and XL for \$7.95 from your Harley Dealer.



SEND \$3.00 FOR CATALOG
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Sity In Canada: Caldine Holdings, LTD.
Box 7, Three Hills, Alberta



VDO-the gauge for the serious biker

VDO Cylinder Hea

VDO Cylinder Head Temperature Gauge

If you're a serious biker you want to **know** what your oil pressure is with hot oil in idle. You want to **know** whether your oil cooler is getting your oil **too** cool . . . or whether your oil is so hot that the additives are beginning to separate!

To keep this info at your fingertips, serious bikers ride with a complement of VDO instruments. It's the surest way to keep your expensive bike in top operating condition, and zero in on malfunctions before they become serious—and costly.

And because VDO gauge kits fit **both** handlebar and fairing, you can move them from bike to bike as you trade in or add a fairing.

See them at your dealer . . . and send for our new color brochure featuring VDO touring, biker

and enduro instruments—plus our new line of low-cost mechanical gauges. As a serious biker you'll want to study it carefully.



VDO CYCLE INSTRUMENTS MC-3
VDO-ARGO Instruments Inc.
980 Brooke Rd., Winchester, VA 22601
Send 1980 color catalog giving precise function of all VDO instruments and telling how they safeguard my bike.

NAME
ADDRESS
CITY
STATE
ZIP



Kenny Roberts World 500cc Roadracing Champion

Many observers expected Kenny Roberts to regain his 500cc World roadracing crown, but no one expected him to face as much adversity as he did to get it. Roberts overcame a cracked vertebra sustained in a pre-season testing crash in Japan, a divorce, a running war with the FIM hierarchy and the immense job of formulating a "World Series" of roadracing to meet the FIM GP series head on. Apart from this, he had young Virginio Ferrari and Barry Sheene in his wake all season waiting anxiously for a bobble. It never happened.

The 28-year-old Californian bewildered European fans with his razor-sharp precision and long vertical wheelies. His leadership among his fellow riders gained him support for the World Series. Next year may be even tougher for King Kenny and his quest for a third consecutive 500cc World Championship aboard his factory Yamahas, for in addition to Ferrari and Sheene, he'll have business pressures and an angry FIM to contend with.

World 500cc Road	fracing
1. Kenny Roberts	Yam113
2. Virginio Ferrari	Suz 89
3. Barry Sheene	Suz 87
4. Wil Hartog	Suz 66
5. Franco Uncini	Suz 51
6. Boet Van Dulmen	Suz 50
7. Jack Middleburg	Suz 36
8. Randy Mamola	Yam 29
9. Philippe Coulon	Suz 29
10. Tom Herron	Suz 28



Kork Ballington World 250cc and 350cc Roadracing Champion

Last year Hugh Neville "Kork" Ballington was the only rider to capture two world titles-and he did it again this year. His Kawasaki teammate Gregg Hansford again pressured him throughout the season but couldn't upset Ballington's consistency. This was Kork's last season in the 350 class and probably his last chance to score double class victories. The South African has joined the herd of other riders committed to compete in next vear's World Series and has signed again with Kawasaki to ride both the 250 and 500 classes. The fact that there is to be no 350cc class in the World Series and that the top riders have agreed to boycott the FIM in favor of the new Series may force the FIM to drop the class altogether.

	World 250cc Road	racing	
1.	Kork Ballington	Kaw141	
2.	Gregg Hansford	Kaw 81	
3.	Graziani Rossi	Mor 67	
4.	Randy Mamola	Yam 64	
5.	Patrick Fernandez	Yam 63	
	World 350cc Road	racing	
1.	Kork Ballington	Kaw99	
2.	Patrick Fernandez	Yam90	
3.	Gregg Hansford	Kaw77	
4.	Anton Mang	Kaw63	
	Michel Frutschi		

W 11 050 B 1

There are 40 million motorcyclists in the world. These are the top 20.

By Ken Vreeke



Patrick Pons World Formula 750 Roadracing Champion

When he's not competing in the World Formula 750 class. Patrick Pons is taking care of business, big business. He owns three large Yamaha dealerships in France which makes him the biggest Yamaha dealer in the country. He's been racing Formula 750s since the early 1970s and was recently awarded a sponsorship from Sonuto Yamaha, the French importer. They brought him to the U.S. this year to compete at Daytona and he finished in third spot ahead of Mike Baldwin. He returned later for the Formula 750 round at Laguna Seca and finished fourth, his highest score of the Formula 750 season.

In winning the World crown, he became the first Frenchman ever to win the championship and, since the FIM dropped the F750 class from its World Championship calendar, the last man to hold the title.



Bernie Schreiber World Observed Trials Champion

For the first time in history an American has brought home the coveted World Trials Championship. Last year in his first full European season, Bernie came within 10 points of besting the world's finest, but a slow season start left him just shy of the title. He didn't get off to a much better start this season either; he was 27 points down from the leader, Yrjo Vesterinen, after the first four rounds. But when the winter's mud dried, Bernie started the charge that would move him from a 27-point deficit to a nine-point advantage over three-time champ Vesterinen by the season's end. He won four of the last eight meets including the U.S. round for the second straight year.

At age 20, Californian Bernie Schreiber is the youngest Trials champion the world has ever seen. He's spent half his life working towards the title and has become so popular in Europe that he travels there during the off-season to ride his Bultaco in sell-out exhibitions.

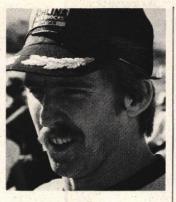
		Control of the
	World Observed T	rials
1.	Bernie Schreiber	Bul114
2.	Yrjo Vesterinen	Bul105
3.	Ulf Karlson	Mon 92
4.	Martin Lampkin	Bul 87
5.	Malcolm Rathmell	Mon 77
6.	Rob Shepherd	Hon 58
7.	Charles Coutard	SWM 43
8.	Manuel Soler	Bul 30
9.	Marland Whaley	Mon 23
10.	Jean-Marie Lejeune	Mon 23



Graham Noyce World 500cc Motocross Champion

Graham managed to do what Brad Lackey found impossible to accomplish on his works Honda: win the prestigious 500cc World Motocross crown. Graham's background is typical for a Briton. He started racing about 11 years ago at local "schoolboy" motocross events. He rode for Maico prior to finishing seventh in the world in 1978, his first contracted year with Honda. In this, his second season with Honda, he managed to capture the title with three moto victories, eight seconds, five thirds and a couple of fifths and sixths. At only 22, he's the first World Motocross Champion England has produced since Jeff Smith won the coveted 500cc crown in 1964 and 1965.

World 500cc Motor	cross	
1. Graham Noyce	Hon	225
2. Gerrit Wolsink		
3. Andre Malherbe	Hon	176
4. Brad Lackey	Kaw	173
5. Heikki Mikkola	Yam	147
6. Roger DeCoster	Suz	125
7. Andre Vromans	Suz	86
8. Jean Jacques Bruno.	KTM	85
9. Y. Van Den Broeck	Mai	75
10. Gerard Rond	Suz	71



Hakan Carlqvist World 250cc Motocross Champion

Hakan Carlovist has learned a lot in his nine years of racing, mostly, he says, from the champions before him. The 25-year-old soft-spoken Swede previously privateered Ossas and Huskys and rode Kawasakis for Torleif Hansen in his early quest for the title. He's been competing in International competition since 1973 and in 1977 was rewarded a factory Husky ride. During his first year under Husky contract Hakan was plagued with injuries, but he bounced back to finish seventh in the world in 1978. He dominated this year's series with a certain consistency that set him ahead of competitors.

Like all the Swedish champions before him, Carlqvist spends his off-season in practice at a motocross club and has built a reputation for his iron-willed training. Next year Hakan will spearhead Yamaha's assault on the 500cc World Championship in place of the retired Heikki Mikkola. He will reportedly earn five times what he was making at Husky.

	World 250cc Moto	ocross
1.	Hakan Carlqvist	Hus218
2.	Neil Hudson	Mai154
3.	Vladimir Kavinov	KTM118
4.	Gennady Moiseev	KTM 96
5.	Rolf Dieffenbach	Kaw 89
6.	Keith Van DerVen	Mai 81
7.	Georges Jobe	Suz 65
8.	Jaroslav Falta	CZ 48
9.	Jean Claude Laquay	re.SWM 45
10.	Jaak Van Velthoven	KTM 43



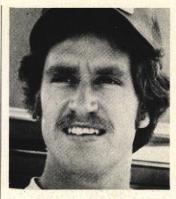
Harry Everts World 125cc Motocross Champion

Suzuki has dominated World class 125cc motocross since its initiation in 1975. Gaston Rahier captured the title for three years running and last year Akira Watanabe took home the gold. But when Gaston signed with Yamaha for this season, Suzuki hired former 250cc World Champion Harry Everts to fill the void. He promptly rewarded them with their only World Championship in 1979.

Everts won the 250cc title in 1975 while riding for Puch and later switched to Bultaco. He finished fourth in the world in 1977 and won the Spanish GP round in 1978. Then an injury later in the season knocked him out of contention for the title. This season the 27-yearold Belgian rode a watercooled 125 prototype tuned by ex-Suzuki team rider Sylvain Geboers to his second career title. His teammate, Watanabe, finished second in a season plagued with injuries.

World 125cc Motocross

1. Harr	y Everts	Suz	314
2. Akir	a Watanabe	Suz	236
3. Gast	on Rahier	Yam	183
4. Matt	i Autio	Suz	132
5. Corr	ado Maddii	Beta	68
6. Pete	r Groneveld	Hon	62
7. Mau	ro Miele	KTM	61
8. M. F	Rinaldi	N.A	55
9. R. G	reisch	N.A	46
10. Gote	Liljegren	KTM	43



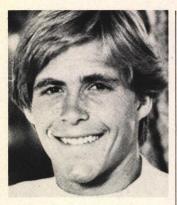
Steve Eklund AMA Grand National Champion Winston Pro Series

Only a year after straddling his first motorcycle, Steve Eklund became the country's top Novice. The following year, 1975, he was top Junior. The next year as a rookie Expert he won more nationals than anyone on his way to becoming Rookie of the Year. He's the first "privateer" to hold the Grand National title since Dick Mann did back in 1963, however Eklund's sponsor spent tons to get him there. The man with the bucks is Mario Zanotti; he's been looking after Steve for most of his career and this year budgeted a team of six mechanics to keep Eklund's two XR750s and 250, 500, and 750 Yamahas running crisply.

They put a stop to Jay Springsteen's three-year reign by winning four Nationals, charging from last to first in two of them and collecting a handful of seconds and thirds. The Grand National title netted Steve a healthy paycheck and he put it to good use. He bought a house in his hometown of San Jose, traded his rickety old Porsche 924 in on a new Ferrari and got married.

AMA Grand National/Winston Pro Series

	110 001100	
1.	Steve Eklund	270
2.	Jay Springsteen	229
	Randy Goss	
4.	Steve Morehead	157
	Mike Kidd	
6.	Gary Scott	150
7.	Hank Scott	147
8.	Rick Hocking	124
9.	Scott Parker	119
n	Corky Keener	110

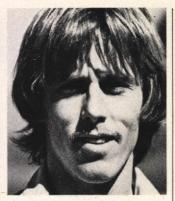


Danny LaPorte AMA National 500cc Motocross Champion

When his father asked him if he would like to enter a real live motorcycle race, 11-yearold Danny LaPorte was a little skeptical, but he soon gave in and rode his first desert race. He chased smoke bombs for a few years before entering a motocross. Six months later he joined Team Suzuki and won the final two rounds of the AMA 125 Championship series, the first wins ever recorded for Suzuki in that class. The following year he was narrowly edged out of the 125 title by Broc Glover after leading the points chase the entire season. He jumped from the 125 class to the 500 class in 1978 and finished fifth despite DNFing half the season's motos with mechanical failures. This year, with all the bugs worked out of his factory RA Suzuki, Danny won the championship in a season-long battle with Mike Bell that ended in a narrow three-point spread.

AMA	500cc	National	Motocross

1	. Danny LaPorte	Suz399
2	Mike Bell	Yam396
3	. Gary Semics	Hon232
4	Arlo Englund	Yam219
5	. Rex Staten	Yam217
6	. Gaylon Mosier	Kaw213
7	. Darrell Shultz	Suz205
8	. Mickey Kessler	Yam201
9	. Marty Moates	Yam188
10	Gren Theiss	Yam 161



Bob Hannah AMA Supercross and National 250cc Motocross Champion

The Nevada Hurricane has once again made motocross history by winning his third consecutive Supercross title and second 250 National championship. But this year wasn't the cakewalk Hannah has enjoyed in the past. He dominated the early season by winning the first four Nationals on his proven Yamaha OW-40 works bike while the other riders were busy sorting out radical new designs. But by the halfway point in the season, both Kent Howerton and Marty Tripes had sorted out their problems and began pressuring Hannah. Kent beat him twice, and Tripes stuck it to him once. But Hannah had built up such an early points lead that he easily won the National crown with a 46-point cushion.

In Supercross he won six out of ten events and, riding with a broken finger, wrapped up the series with a sixth-place finish at New Orleans. He sat out the season final at Anaheim with a cast on the leg he broke in a water-skiing expedition with Marty Tripes.

AMA 250cc National Motocross

1.	Bob Hannah	Yam .	454
2.	Kent Howerton	Suz	408
3.	Marty Tripes	Hon	315
4.	Jim Weinert	Kaw.	253
5.	Mark Gregson	Yam	226

AMA/Toyota Supercross Motocross

1. Bob Hannah	Yam253
2. Jim Weinert	Kaw213
3. Mike Bell	Yam210
4. Steve Wise	Hon191
5 Kent Howerton	Suz. 150



Broc Glover AMA National 125cc Motocross Champion

When 14-year-old Broc Glover started racing in 1974, he dove in head first, religiously competing in amateur races every weekend. He followed the same rigorous schedule in 1975 and burst into the National spotlight in 1976 by winning both motos of the Hangtown 125cc Sportsman class by over a minute. Yamaha jumped at the chance to hire Glover as a full-fledged factory rider and he returned the favor by capturing the 125 National crown in 1977 and again in 1978. This season he jumped to an early lead by winning seven consecutive motos and spent the rest of the season collecting calculated seconds and thirds.

Yamaha allowed "Broccoli" to compete in some of the earlier Supercross events before the National season which may indicate a more involved effort for him next year.

AMA 125cc National Motocross

1.	Broc Glover	Yam369
2.	Mark Barnett	Suz299
3.	Brian Myerscough	Suz269
4.	Warren Reid	Hon244
5.	Donnie Cantaloupi	Yam225
6.	Jeff Ward	Kaw210
7.	Jim Gibson	Suz172
8.	Ron Turner	Yam149
9.	Pat Moroney	Suz146
10.	David Taylor	Yam124



Kent Howerton Trans-USA Motocross Champion

Just three years after riding his first motorcycle, Kent Howerton found himself battling international stars at the 1973 Inter-Am series where he scored a surprising second overall. As a privateer in 1975 the "Rhinestone Cowboy" won five out of ten National motos but narrowly missed the championship. Husky took notice and signed him on in 1976 to ride the 500cc Nationals and Kent showed his appreciation by grabbing the championship for the grateful Swedes. In 1977 he won the first annual Olympiad of Motorcycling and waltzed away with \$10,000 in winnings, the largest single purse won by a motocrosser.

This year Suzuki-mounted Howerton had a prosperous season indeed. He placed second to Hannah in the 250cc Nationals, won the World 250cc round at Unadilla, placed fifth in the Toyota Supercross tournament, won the ABC Superbikers event and the Trans-USA championship (despite being plagued by the flu).

Trans-USA Mot	ocross
1. Kent Howerton	Suz201
2. Mike Bell	Yam191
3. Darrell Shultz	Suz160
4. Chuck Sun	Hus143
5. Brad Lackey	Kaw130
6. Arlo Englund	Yam103
7. Broc Glover	Yam101
8. Marty Moates	Yam100
9. Andre Malherbe	Hon 83
10. Danny Chandler	Mai 77



Wes Cooley AMA National Superbike Roadracing Champion

Since his dad was a founding father of club roadracing in California and an active participant, it was only natural for Wes Cooley to take up roadracing. His early career had its ups and downs, mostly downs with painful results. But he showed promise and hooked up with Pops Yoshimura in 1976. During that first Superbike season he was hard on equipment. In 1977 he calmed down enough to stay in the saddle and won his first Superbike National at Riverside. The following year he loaded his mantle with trophies from Pocono and Laguna Seca and ended up fifth in the season's standings.

In this, his third season with Yoshimura, he managed to capture the elusive Superbike title on his Suzuki GS1000 without a single National victory. Nagging tire problems and mechanical ills kept him out of first place. He finished second at Daytona and Laguna Seca and third at Loudon and Sears Point. Between Nationals he rode Formula One and the AGV Cup Races in Europe.

	AMA Superbike Roa	adracing	
1.	Wes Cooley	Suz	58
2.	Ron Pierce	Suz	55
3.	Freddie Spencer	Kaw	51
4.	Richard Schlachter.	Kaw	45
5.	Harry Klinzmann	BMW	30
6.	Chuck Parme	Kaw	27
7.	John Bettencourt	Suz	.22
8.	Mike Baldwin	Kaw	16
9.	Dave Emde	Suz	.16
10.	John Long	BMW	.16



Rich Schlachter AMA National Formula 750 Roadracing Champion

Rich Schlachter rode his first National season aboard a TZ750 in 1978 and didn't even finish in the top ten. He had to split his time between running a successful carpentry business and his building interest in GP racing. He came to national prominence after making the difficult decision to sell his business and commit himself to winning the 1979 Formula 750 title.

At 27, Rich was a late-comer to the racing scene. He first competed in 1979 at a local club race near his home in Connecticut and the following year purchased a TZ250. With only marginal help from a local sponsor, Rich swallowed the enormous expense of maintaining a GP machine. Even in his winning 1979 season he maintained his own Yamaha TZ750 and paid the majority of his expenses including travel to the AGV Cup races in Europe. Next year, pending financial backing, he hopes to compete in the World Series while defending his National title.

AMA Formula 750 National Roadracing

National Hoadrad	ing	
1. Richard Schlachter	Yam	43
2. Kenny Roberts	Yam	40
3. Dale Singleton	Yam	40
4. Skip Aksland	Yam	36
5. Gene Romero	Yam	28
6. Ron Pierce	Yam	23
7. Dave Emde	Yam	17
8. Miles Baldwin	Yam	15
9. David Aldana	Yam	13
10. Harry Klinzmann	Yam	12



Freddie Spencer AMA National 250 Roadracing Champion

Freddie was a terror at local dirttracks around his Louisiana home beginning at age 6, and soon became interested in roadracing. He won the first race he entered on an RD250 and graduated to GP racing on a TA125 at the ripe old age of 12. His first ride on a GP bike was an amateur race at Daytona where he led until his bike seized. He returned when he was 13 to win. He continued dirttrack racing and at 15 was competing in WERRA club roadraces; he took four class championships his first year out. In 1978 Freddie turned professional Novice and won every dirttrack event he rode.

Today Freddie Spencer is considered by many, including Kenny Roberts and Freddie's tuner/builder, Erv Kanemoto, to be the next American roadracing Superstar, and it's no wonder. At 18, Freddie is a 12-year racing veteran. This year alone he won all the 250 GP events he entered, six out of nine dirtrack events, and in his first season on a superbike, took overall victories at the Sears Point and Laguna Seca Nationals for Kawasaki.

AMA 250cc National Roadracing 1. Freddie Spencer............Yam......56

2.	Eddie Lawson	Yam	24
3.	Gennedy Liubimski	Yam	23
4.	Mark Homchick	Yam	21
5.	Skip Aksland	Yam	20
6.	Rusty Sharp	Yam	18-
7.	Mike Baldwin	Kaw	16
8.	Pierre Beullac	Yam	16
9.	Randy Mamola	Yam	13
10.	David Garoutte	Yam	12



Dick Burleson AMA National Enduro Champion

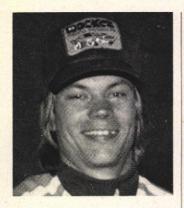
Dick "King Richard" Burleson mastered the unique requirements of enduro riding long ago when he won his first National championship in 1973. Dick has had custody of the Enduro crown for the past six years now, and he's looking forward to beating Bill Baird's longstanding record of seven consecutive titles.

Between rounds of the AMA's 13-race enduro schedule, Dick qualified to ride the ISDT. He crashed heavily just prior to the event and rode the entire six days with a painfully sprained neck. He still managed to finish on Gold and seventh-best among the American riders. That brings the 32-year-old Blacklick, Ohio, resident's Six Day medal collection to six Gold, one Silver and one Bronze. Between weekend races he works as Eastern service manager for Husqvarna where he's been employed for the last eight years.

AMA National Enduro

	VIIIV Hariniai	Liluui v
1.	Dick Burleson	Hus231
2.	Drew Smith	Suz221
3.	Mike Hannon	Kaw149
4.	Billy Geier	KTM124
5.	John Martin	
6.	Bob Popiel	Hus109
7.	Rick Munyon	Hon106
8.	Don Stanford	Mai102
9.	John Fero	Yam102
10.	Ted Worrell	Hon 94

MERIONS



Mike Bast National Speedway Champion

It should come as no surprise that Class-A racing in the U.S. was once again dominated, for the seventh time, by Mike Bast. He's been virtually unrivaled since 1973 with consecutive victories in all but 1974 when he was injured during the Nationals. His aggressive style is accented by full-lock feet-up slides around the tight Southern California ovals. He's been so successful in American speedway that many riders and fans have come to resent his dominance. They question his refusal to travel overseas to compete in World class competition, but Bast feels the World title is achieved unjustly on a track familiar only to those who have been competing there throughout the year. If they held the race on a track familiar to nobody, and if he had the right offer, he would consider going. Meanwhile he'll continue racing here in the states and sneering back at the fans while a pack of hungry broadsliders snap at his crown.

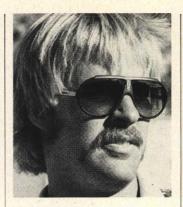
	U.S. National Speedway	
1.	Mike Bast1	5
2.	Allen Christian1	3
3.	Larry Kosta1	2
4.	Gene Woods	9
5.	John Sandona	9
6.	Mike Faria	8
7.	Dave Sims	7
8.	Duane Yarrow	7
9.	Tony Briggs	7
	Shawn Moran	



Jim Bernard NMRA Top-Fuel Champion

Jim Bernard and his builder Ron Teson have injected immense excitement into motorcycle dragracing with their beautifully prepared and ungodly fast top-fuelers. They teamed up in 1974 and competed on Ron's doubles until 1977 when they completed a blown, single-engined, nitroburning Honda. Jim's debut on the "Giantkiller" was at the World Finals. He had never ridden anything so potent before but hung-on to take his first National victory and set a new NHRA World record ET of 7.65 seconds in doing so. He rode the Honda for two years and notched 43 passes in the seven-second bracket before retiring it in favor of Ron's current weapon: a Magnacharged Yamaha XS Eleven. In his pursuit of this year's Top-Fuel crown, 27-year-old Bernard broke his own record with a 7.57 ET (184 mph) at Indy.

NMRA Top Fuel		
1. Jim Bernard	Yam .2040	
2. Roy Thacker	Kaw .1203	
3. Pee Wee Gleason	Kaw804	
4. Elmer Trent	H-D407	
5. Marion Owens	H-D406	



Marland Whaley AMA/NATC National Observed Trials Champion

It is said that 21-year-old Marland Whaley runs an incredible 60 miles a week to keep in shape for this demanding sport. He entered his first trials at age 11 and only two years later joined Team Montesa. He became Southern California champion in 1973 and later that year fudged his age to get an International competition license and rode the Spanish World round. He turned 16 in 1974 and finished second in the first AMA/NATC Trials tournament. In 1975 Honda contracted him to ride their new four-stroke trials bike and he rewarded them with three National championships in a row, while finding time to finish a spectacular second in World Trials competition in 1976.

This season he won six out of nine Nationals on his Montesa to regain his title—despite a chain-saw accident just prior to the season that left 250 stitches in his knee.

AMA/NATC National Observed Trials				
1. Marland WhaleyMon 7	5			
2. Bernie SchreiberBul	66			

1.	Ivialianu vvnaicy		13
2.	Bernie Schreiber	Bul	66
3.	Jack Stites	Mon	46
4.	Lane Leavitt	Bul	39
5.	Dave Burke	Bul	37
6.	Morgan Kavanaugh	Bul	35
7.	Dennis Seiler	Mon	30
8.	Scott Head	Bul	27
9.	Wayne Galvin	Bul	23
10.	Keith Adams	Bul	21



Bob Carpenter NMRA Pro-Stock Champion

When the light flashed at the end of Ontario Motor Speedway's strip it signaled the end of another season-long bout between Bob Carpenter and R.C. Engineering's Terry Vance. But this time Bob came out on top. He's been the only one to consistently challenge Vance over the years and actually beat him out of the No. 1 plate in 1975. The newly formed NMRA, the motorcycle arm of the National Hot Rod Association, crowned Carpenter as its first Pro-Stock Champion, and in doing so, enabled him to capture Kawasaki's national-title bounty of \$10,000.

Bob was a late-comer to the drag scene. He started when he was 25 and two years later became the AMBRA National Pro-Stock champion. He has held the world pro-stock ET record over 10 times and currently holds it again at nine seconds flat.

	NMRA Pro S	tock
1.	Bob Carpenter	Control of the Contro
2.	Terry Vance	Suz4361
3.	Wayne Buckler	Kaw .2623
4.	Butch Pace	Kaw .1013
5.	Donald Solley	Kaw . 609

THE CHAMPIONS



A pro's-eye view of

"It was a great idea for motocrossers...it's a great idea for streetbikes."

The great idea? A boxed aluminum swing arm. What's great about it? "Won't flex...less weight on the shocks." By the way, the shocks offer 4-way rebound damping and 5 load settings. "This suspension system plus the light chassis is what makes this Suzuki such a great handler."

"This 16-valver is a steamer."

That's Terry's way of saying Suzuki's new 4-stroke mill is very quick. Should be. After all, the 16-valve head with patented Twin Swirl Combustion Chamber design produces more power than conventional 4-strokes. He also likes the lightweight rocker arm: "... eliminates costly valve shims." And he praises the heavy-duty clutch this way: "I can really hammer it on."

"It's an easy bike to work on."

"You can adjust the valves just by removing the valve cover. Saddle lifts right off so it's easy to get at things. And the pointless transistor ignition eliminates the hassle of adjusting points."



SUZUKI 1980
The Performer.

the new GS-1100 E.

"One fork doesn't end up doing all the work."

That pretty well sums up the benefit of the balance tube which connects the front air forks. And what do the 4 load settings and 4 damping adjustments add up to for Terry? "Perfect tuning."

"Sure, I like the color ... it's mine."

What Terry means is, the paint job is similar to his silver Pro Stocker. He also had kind words for the built-in check circuit: "Nice safety item."

"These brakes won't fade."

TERRY

One reason is, the beefy triple disc brakes are slotted to reduce heat during hard stops.

Terry Vance.

Three-time holder of drag racing's Pro Stock Number One plate.

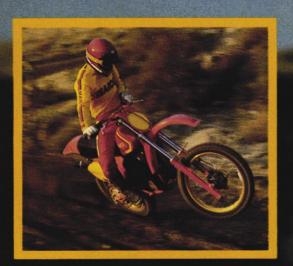
1980 GS Model TWELVE-MONTH UNLIMITED MILEAGE WARRANTY*

Ignore the usual lines and the well-worn berms—the M1's steering lets you carve your own.

otocross riders are a little like lemmings, those hamster-like rodents that jump off of cliffs in droves and fall to their deaths. They do this partly because instinct drives them, but also because they are followers by nature. Your average lemming is completely content to follow the lemming in front of him no matter where he might lead, even if the lead critter gets his directions mixed up and takes the big plummet. The result is sort of a rodent paste at the base of the cliff.

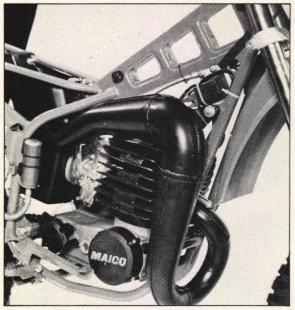
Though motocross riders don't often make a habit of riding off of cliffs, they do get into the follow-the-leader routine. This freight train effect carves a single line all the way around the track in short order. Pretty soon all the different lines are just about obliterated and the path of least resistance becomes the lemming-line. Now this isn't really so bad, except when it comes time to pass slower riders. To get around these guys, you have to leave the well worn path—you've got to improvise. But since you're used to the ready-made high-banked berms, getting through a turn faster than normal while using an unfamiliar line often proves difficult. Much of the time you're forced to wait for the slow guy to make a big bobble before you can pass.

However with the legendary steering of a Maico on your side, you don't have to wait for anyone. The 440 has flaws, but the way it steers borders on perfection. You can use any line you like and still feel just as se-

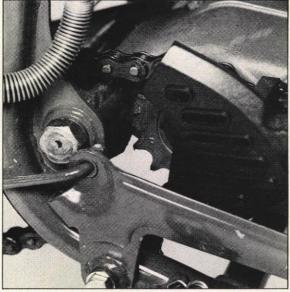




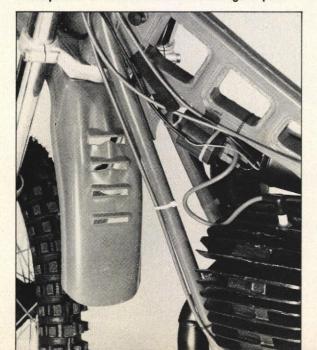




Maico's biggest powerplant has received a lot of changes which make it the second fastest engine in MX.



The 440's exceedingly slim engine cases contain an extra transmission shaft, allowing the 14-tooth countershaft sprocket to be ultra close to the swingarm pivot.



cure as you would on the familiar berms. You can do things in the corners that riders on other bikes wouldn't dare try. You can turn inside of any open-class bike available. The 440 seems to find traction where there is none—on hard-baked adobe and nasty off-camber turns. Thanks to the Maico's ultra-precise steering characteristics you don't ever have to play follow-the-leader.

Maico has always had a reputation for leading-edge technology. They originally dreamed up the idea of leading-axle front forks way back in the Sixties and now everyone has adopted the idea. They are also largely responsible for the advent of long-travel rear suspension. For 1980 the Maico engineers have broken some new ground but have passed on the major breakthroughs that they have proven they are capable of.

Much of the engineering effort has been concentrated on the 440's chassis. The frame is entirely new, featuring a stamped steel backbone instead of the usual tubular steel. This "Megaform" backbone is built up out of sheet metal stampings which are welded together to form an extremely rigid structure. Dimensionally the new frame is different. The footpegs have been moved rearward. The upper shock mounts have been repositioned to accept new Corte Cosso gas shocks that are 10mm longer than last year's. The rear wheel travel is now 12.2 inches. The MC-1's engine bay has gotten considerably smaller, so now a shorter head stay is used. And up at the front end, the steering head angle has been pulled in one degree to 28 degrees.

The 440's bit of engineering exotica is the new fork assembly. First, there's a set of forged aluminum triple clamps that are lighter than last year's. The lower clamp is heavily offset vertically to allow clearance for the fork sliders at full compression. The big news is that these sliders are stroking on 42mm stanchions. This gives the Maico the biggest diameter tubes in all of motocross. The monstrous size makes for tremendous rigidity. And to add further strength, the bearing area between the tubes and sliders has been increased to 8.5 inches. This tremendous amount of engagement should cut down on binding and stiction to provide smoother fork action. The fork strokes 12.2 inches and comes with a set of air caps. Maico recommends between 8 and 14 psi.

One side effect of the fork's gargantuan size is its huge oil capacity. Topping up requires 570cc of 5weight oil in each leg. You heard right. That's at least twice as much per leg as on any other bike in recorded history. If you're contemplating frequent fork oil changes, you'd best become acquainted with a wealthy Arab. The fork sliders have bronze bushings in their upper ends to further cut down on friction. Additional pinch bolts keep a firmer grip on the axle too. The front wheel is essentially unchanged, though it has been flopped so now the brake backing plate is on the bike's left side. This lets the brake cable bend more gradually than in the past to reduce the likelihood of kinking. A longer arm bolts to the actuating cam to provide more stopping power. The same leverage ratio juggling was performed on the full-floating rear brake too, so now less pedal pressure provides more stopping power. The rear hub is now cast of aluminum instead of magnesium, with the intent of keeping the sprocket bolts tighter for a longer period of time.

Though externally similar to last year's engine, the 438cc piston-port powerplant incorporates several significant internal changes. The port timing and layout are entirely new and are aimed at boosting midrange power. There's a new exhaust system too. The pipe mounts more securely to the cylinder than in the past and is

There's no telling if these ventilation slots in the front fender are really necessary. They probably have more psychological effect than practical value.

RPM HP TORQUE 3000 7 69 13.45 350013.72 9.1515.3811.71 4000 450017.89 .20.89 80 5000 .21.84 .22.94 80 5500 .25.0223.89 6000 .29.82......26.10 6500 .36.04......29.12 CORRECTED REAR WHEEL HORSEPOWER 7000......39.19.....29.4040.41......28.30 7500.... 8000......38.93......25.56 **TORQUE IN POUNDS FOOT** TESTED FOR 60 60 MOTORCYCLIST ON THE WEBCO DYNO 40 40 HP (40.41 max.) TORQUE 20 (29.40 max.) RPMx100 20 80 100 40 60 PRICE 1980 MAICO 440 M1 \$2469 1980 YAMAHA YZ465G \$1998 1980 HUSQVARNA CR390 \$2395 2000 2200 2400 2600 2800 HORSEPOWER 40.41 at 7500 rpm 1980 MAICO 440 M1 1980 YAMAHA YZ465G 41.92 at 7000 rpm 1980 HUSQVARNA CR390 35.81 at 6500 rpm 25 30 35 40 45 WET WEIGHT 1980 MAICO 440 M1 246 lbs 1980 YAMAHA YZ465G 244 lbs 1980 HUSQVARNA CR390 249 lbs 230 235 240 245 250 SUSPENSION TRAVEL 1980 MAICO 440 M1 FRONT 12.2 in. REAR 12.2 in. 1980 YAMAHA YZ465G FRONT 11.8 in. **REAR 12.2 in.** 1980 HUSQVARNA CR390 FRONT 11.8 in. REAR 12.2 in. 10 13

MAICO 440 M1



Suggested retail price	\$2469
Warranty	
Number of U.S. dealers	315
Cost of shop manual	

ENGINE

Type	Two-stroke, piston-port single
Displacement	438cc
	82 x 83mm
Compression	12:1
Carburetion	1, 40mm Bing slide needle
Ignition	Motoplat electronic
Lubrication	Premix
Air filter	Oiled foam
Battery	None

DRIVETRAIN

Primary transmission	Triplex chain, 1.86:1
Clutch	12 plates, wet
Final drive % x 1/4 (No. 520)	

CHASSIS

Fork	42mm Maico, 12.2 in. travel
ShocksCorte Cosso	gasers, 12.2 in. wheel travel
	3.00-21 Metzeler
Rear tire	4.50-18 Metzeler
Rake/trail	
Wheelbase	57.5 in. (1460mm)
Seat height	
Ground clearance	13.0 in. (330mm)
Fuel capacity	2.5 gal. (9.5 liters)
Wet weight	246 lbs. (112kg)
Colors	Red
Instruments	None

PERFORMANCE

Power to weight ratio	6.1 lbs./hp
RPM at 60 mph in top gear	5780
Speed in gears at (redline)	
2	nd 39 mph; 3rd 51 mph;

4th 65 mph; 5th 77 mph

capped with a repackable muffler. A lighter piston pumps against a 12 to 1 compression ratio—down a point from last year—a change which makes the bike less sensitive to fuel quality. The Maico certainly isn't hurting for power, so this minor concession to today's sickly gasolines doesn't hamper the bike on the track.

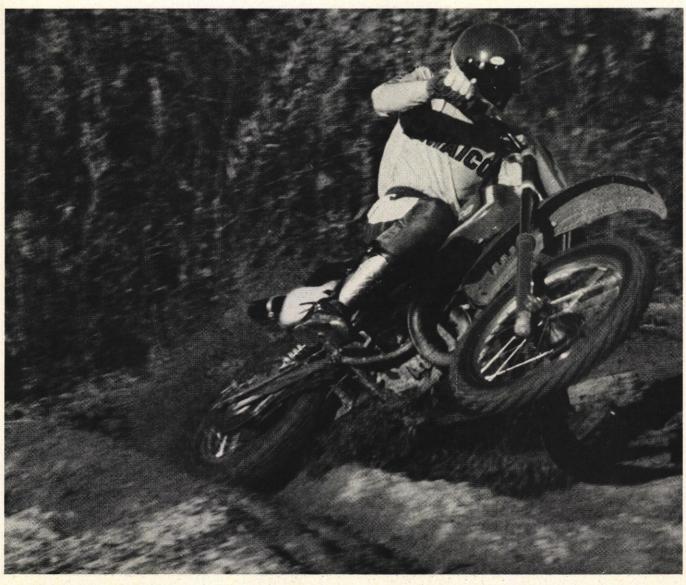
The dyno shows the 440 making just about 40.5 horsepower at its 7500-rpm peak, so the German pistonport engine puts every other bike in the open class on the trailer-with the exception of the incredible Yamaha YZ465. The Monocrosser maintains about a 1.5-hp advantage over the Maico when both motors are at their peaks. Surprisingly, in spite of Maico's reputation for low-revving torque, the 440 is actually a bit pipey compared to the YZ. The M-1 peaks 500 rpm higher than the Yamaha, and is well off the torque pace all the way from idle to redline. This is not to say that the Maico is weak. It's just that the Yamaha is so horrendously powerful that any dirt bike is bound to look weaker by comparison on the dyno. Luckily for the 440, the difference isn't nearly so pronounced in the dirt. With its fantastic Metzeler tires, the Maico hooks up very well. So in most limited traction situations the two bikes are nearly dead even. Only when both machines are getting 100-percent traction will the YZ pull away.

The 440's 40-odd horses are fed through a reworked bottom end. Minor changes to the gears themselves increase strength, and a new shift mechanism delivers

more positive shifts. The engineers retained the same spring washer clutch for another year, though they made an effort to improve its action. The stiff lever pull is still present, but the clutch doesn't drag excessively. Generally, the M-1 doesn't shift quite as smoothly as some, but missed shifts are very rare. Maico's clever third transmission shaft is still present in the 1980 model. The extra shaft gets the countershaft sprocket as close as possible to the swingarm pivot for more consistent chain tension while keeping the bulk of the engine weight where it should be for proper weight distribution.

Outwardly, the M-1 440 seems to reflect a bit more concern for details than we're used to seeing from Maico. The sand-cast engine pieces still have that rough-hewn look, but the paint and bracketry are finished in a more workman like manner. They even made an effort at easing service hassles. The seat comes off just by removing two bolts. This exposes the two-stage foam air filter element that is secured with a heavy wire retainer, a la Husqvarna. And with the seat off, the plastic gas tank slides right off too. With all new plastic pieces, the bike should be more crash proof as well.

It's a good thing too, because as the bike is delivered, you'll probably spend a fair amount of time on the ground. No, it's not the steering's fault. We've never ridden any dirt bike that steered with more accuracy or instilled more confidence in the rider. The 440's tip-over tendencies are brought on almost entirely by its suspen-



sion action-or lack thereof. Both ends of the bike are unresponsive to sharp-edged bumps of any size. Overly firm damping keeps the wheels from following irregularities and maintaining traction. And this harsh action wears out the rider with constant pounding over all but smooth, rolling bumps. Braking over stutter-bumps sees the suspension at its worst. The front wheel skips along the tops of ripples and lips, limiting your braking power considerably. Combined with super-quick steering geometry this chattering often gets the bike's front end oscillating from side to side, and you can imagine how disconcerting this can be. We tried to soften up the fork action by changing the air pressure and oil level, and even went to super-thin 2.5-weight oil-all with only a small improvement. The only real fix is to drill holes in the damper rods to reduce the overall resistance.

The Corte Cosso reservoir-equipped gas shocks have much the same problem—too much damping. Maico informed us that later production machines will be fitted with re-worked shocks. Hopefully they'll be better.

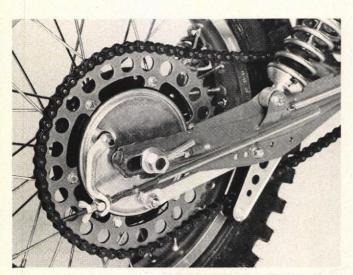
Other aspects of the Maico's handling are much less nerve-wracking. With good power and razor-sharp steering, you can place each wheel almost exactly where you want it. The sticky front Metzeler can be kept precisely on your chosen line—threading along the very edge of a wheel-eating rut or clinging tenaciously to the tinniest of berms. And at the same time you can place the back end a few inches out in a controllable drift. Somehow

the Maico gives you a feel for the traction and self confidence in yourself that no other machine can match. Until you hit a few bumps.

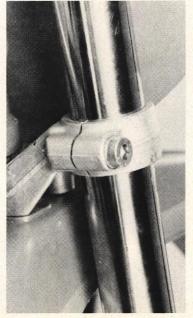
Maicos have always had a reputation for superlative handling. They've also been known to be pretty temperamental, too. Our test bike upheld both of these truisms to a certain extent. Nothing on our bike actually broke, but a number of fasteners either loosened repeatedly or fell off entirely. Some of these even had nylock-type nuts on them. Heavy engine vibration is likely responsible for this, as well as for the tiring vibes which reach the rubber-mounted handlebars.

The engine was also quite sensitive to intake restriction. Once the air filter got semi-grubby, the bike lost some of its bottom-end power and would even load up if forced to pull at low revs.

It's a shame that this basically excellent motocrosser doesn't have the best suspension components. Unlike the race-ready Japanese machinery, the Maico needs a few critical suspension changes before it will truly be ready to line up at the starting gate. And even then, the 440 is likely to require conscientious maintenance to keep it running sharp. If you have the skill and inclination to perform these mechanical tasks, the M-1 will reward you with handling that no production open-classer can match. Once it's set up right, the 440 Maico should make getting past those nose-to-tail lemming riders as easy as jumping off a cliff.



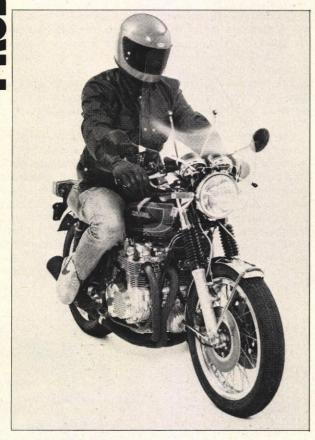
The rear drum isn't a full floater, but it is well behaved and rarely chatters. Maico's incredibly strong 42mm front fork mounts in all new aluminum clamps. The lower one has a big offset to clear the sliders at full compression.





Fork flex is no problem on the M-1. Not only are the tubes the biggest diameter available in a production bike, they also have a whopping eight inches of overlap.

EVALUATION By Joe Minton



ATA SHIELD

he ATA Sport Shield is a small handlebar-mounted fairing uniquely designed for motorcycles equipped with low European-style handlebars. A clever and simple four point mounting system ensures easy installation and removal of the shield. Small size (23 x 32 inches) clean aerodynamics and a low turbulance wake result in excellent protection, stability nearly equal to the unfaired motorcycle and no fuel-mileage penalty; this combination blends perfectly with the philosophy of the back-road "Euro-Tourer."

Constructed of 1/4-inch acrylic plastic, the Sport Shield is cut to fit individual brands and models including most

of the popular middleweight and larger motorcycles currently available. From the front its shape resembles that of a tablespoon or an egg, a pleasing shape made possible by its small width. In profile the Sport Shield is gently curved in the portion that the rider looks through and is remarkably distortion free. The lower half curves forward to enclose the instruments and reaches down the flanks of the headlight to a point near the bottom triple clamp.

Threaded rods replace the rear handlebar clamp bolts and reach up to two rubber bushed holes in the shield. Sheet steel straps secure the lower shield to the headlight assembly. The resulting four attachment points provide a rigid, vibration-free mount that is simple and uncluttered in appearance. The shield can be easily detached for cleaning. The mounting rods may also be quickly removed and replaced by the original bolts if the feel of the wind beckons.

Our test bike was a BMW-bar-equipped Honda CB550 and was used for daily commuting, several three-hundred mile trips and many Sunday rides. It was ridden in rain, fog, and heavy winds. Remarkably, stability did not deteriorate with the shield in place. The effect of side winds was more noticeable as the handlebar moves slightly, but the stability was not compromised. During one trip over the mountainous Tejon Pass, quartering, gusting headwinds of 55 mph required fourth gear and full throttle to maintain, however its stability was greater than all of the cars sharing the roadway.

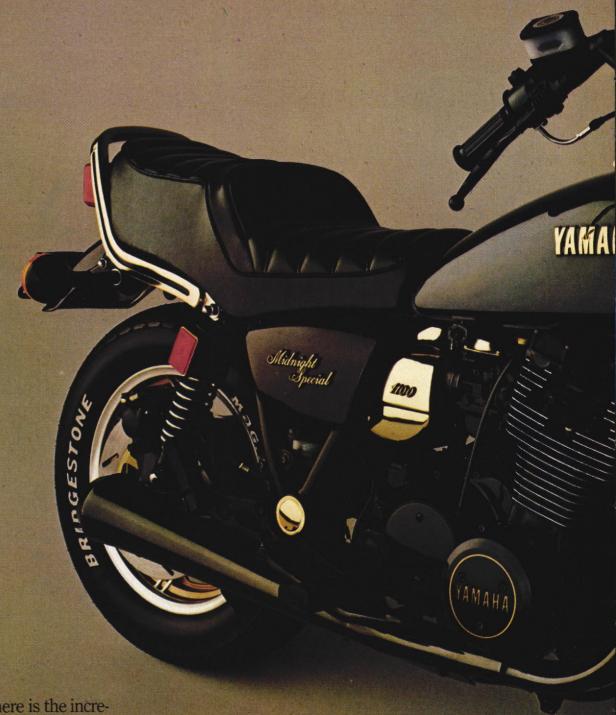
Fuel mileage was unchanged with use of the shield, ranging from 38 on a brisk "Sunday Ride" to 67 mpg while cruising with a strong tailwind. The ease with which the shield can be removed led to a simple but effective cleaning technique: take it into the shower!

Most fairings leave turbulent wakes that result in buffeting, especially for the passenger. The ATA Sport Shield provides excellent protection from the knees up and does not buffet the rider or passenger. It is an elegant, simple and effective fairing that is the best yet for those who prefer light, low and simple motorcycling.

The ATA Sport Shield costs \$49.95 (or \$59.95 tinted) including UPS delivery in the continental United States and is available from Anderson Transit Authority, 855 S.W. 3rd St., Suite 6, New Brighton, MN 55112. A similar shield with wings to protect your hands is available for bikes with wider handlebars.



INTRODUCING THE LATEST YAWAHA TECHNO MIXED WITH A LITTLE BLACK MAGIC.



What you see here is the incredible new Yamaha Midnight Special. The ultimate synthesis of styling and technical sophistication. A motorcycle, for the most part, built by hand, employing production innovations that have never been used before.

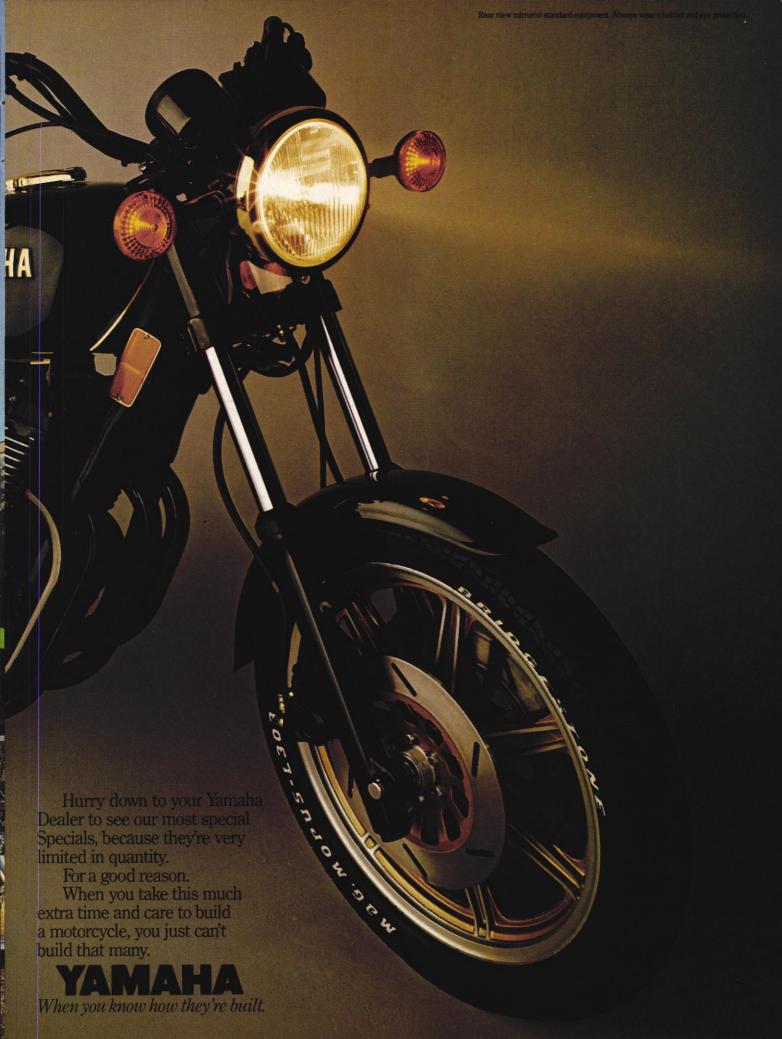
The frame, for instance, is hand-welded using an argon process instead of conventional CO₂ gas welding. Smooth, even welds are the result.

To achieve the rich lustre of our black chrome and to keep the muffler from discoloring at normal operating temperatures, we developed a costly four-step plating process. The final step is oil polishing, again by hand, for a deeper, richer, blacker black.

From the black of the engine to the deep, glossy, triple-baked black that graces the tank, fenders, and side covers, a Midnight Special's finish is, quite simply, a labor of love.

What isn't menacingly black is meticulously gold. Gold gas cap, etched name plate, grab rail, and a pair of gold one-piece alloy wheels. Beautiful, durable gold plating that looks like the real thing because we used 24k gold as the standard.

The XS Eleven Midnight Special boasts a four-cylinder powerplant that's the biggest we've ever put in a production machine. The XS850 Midnight Special sports our awesome triple. And both offer the turbinelike propulsion of shaft drive.







HOW TO GET OUT OF TOWN. FAST.

Put yourself on an XS11 or new speed constant-mesh transmi-XS850, point yourself out of town sion and fully enclosed directand twist the throttle. speed constant-mesh transmicoupling shaft drive system the

You'll quickly discover Yamaha's two biggest and best street bikes are also the fastest, most exciting ways to sail the open highway. Whether it's just you and your bedroll on a weekend jaunt, or a full-dress, crosscontinent expedition with a friend on back, the XS11 and XS850 are designed to travel.

To the left, you see an awesome XS11, with everything. To go. Its in-line four-cylinder engine cranks out tremendous, steady power. It can cruise at highway speeds all day long without even breathing hard. And still have plenty of guts left to rocket around 18-wheelers or buck a head wind.

Four constant-velocity carburetors keep the beast well fed. Transistor-Controlled Ignition (TCI) produces reliable, carefully monitored electrical output. And Yamaha's vacuum advance system responds instantly to the slightest throttle command.

Transferring the raw horsepower to the pavement is a fivespeed constant-mesh transmission and fully enclosed direct-coupling shaft drive system that keeps you rolling smooth and quiet, mile after mile. Virtually maintenance free.

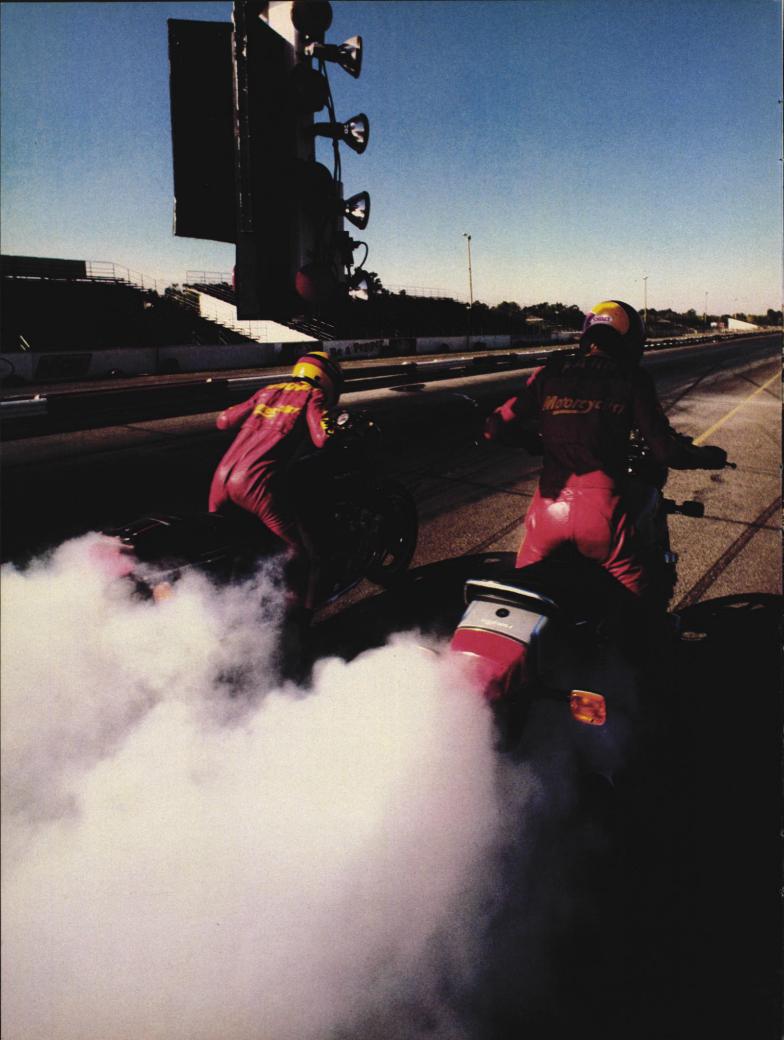
Our brand new and unique XS850 in-line triple delivers all the power of a four-cylinder engine. But its very narrow and light three-cylinder design affords superb handling. Shaft drive, TCI, and a special oil cooler for prolonged engine life make the XS850 a fast, reliable highway hauler.

Both superbikes come with fully adjustable rear shocks and air/spring adjustable front forks.

And no matter what kind of riding you like to do, you can dress for the occasion in genuine Yamaha accessories like you see here. All made to measure, with fasteners that fit, colors that coordinate and lines that integrate.

Next time you get the urge to get out of town fast, climb aboard an XS11 or XS850. You'll find the shortest distance between two points is a Yamaha.

YAMAHA
When you know how they're built



SUZUKI GS1100 Vs. HONDA GBX

Is There A New Superbike King?

f there was ever an inevitable comparison test, this is it. Long before we'd ever even seen Suzuki's new 16-valve GS1100ET, calls and letters from readers began to come in with the same question: "Is it faster than the Honda CBX?"

It was an unavoidable question. In 1978, when all four of the big Japanese companies unleashed their latest street-scorching superbikes, Honda was the last to join the fray. But their offering, the six-cylinder, twin-cam, 24-valve, 1047cc bullet called the CBX stunned even testers who had ridden the other three missiles. Although perhaps flawed in other areas, the CBX was unmatched for power, speed and acceleration. And in 1979, when the other three superbikes got slower, the CBX lost not an iota of its punch.

But for 1980, two things happened to threaten the CBX's crown. First, while making a series of changes and improvements to the CBX, Honda deliberately knocked back the Six's power a bit. Secondly, Suzuki released the four-cylinder, DOHC GS1100ET, the first bike to share the four-valve-per-cylinder layout which previously had been employed exclusively by Honda to extract power and performance from their four-strokes.

Suzuki let it be known that the GS1100 was intended to be the fastest, quickest street bike ever. Since any test of the GS1100 would inevitably draw comparisons with the CBX, we arranged a kind of Superbike Six-Day Trial to test the two machines side-by-side in every facet of performance demanded from big street bikes.

DAY ONE: THE DRAGSTRIP

With the GS1100's engine howling and blue-white smoke billowing off the rear tire, Associate Editor and dragstrip tester Jeff Karr looked as though he'd been riding the bike for years. In fact, before throwing a leg over the Suzuki a few moments earlier, his only ride on the bike had been a quick trip down a driveway on the previous evening. His first real ride on the GS1100 began here at Orange County International Raceway's staging area where he was warming up the rear tire for maximum traction. Two other staffers rode the bikes to the strip; now Jeff had to launch them down that all-important quarter-mile.

A slight headwind blew the rubber smoke away as Jeff released the front brake and lurched toward the starting line. A black tire track traced his path for the first 40 feet. At the line, he inched the bike forward until first one, then both of the staging lights winked on, indicating that the bike's front wheel was positioned exactly on the starting line. The Christmas tree's lights began to flash their countdown: yellow, yellow... green. Jeff and

the Suzuki were gone—the rear tire howling and smoking to indicate time lost. At the top of first gear Jeff was reminded of the drawbacks to learning about new bikes at the dragstrip; he couldn't find the shift lever on the first stab. More time lost. A moment later the clocks stopped at 12.02 seconds. Not very impressive, but it was a first pass. The speed reading told how it was going to be: 119.0 mph. Despite the slight headwind, that's 1.5 mph faster than the next quickest production-line motorcycle (the 1978 CBX) Motorcyclist has ever blitzed through the dragstrip clocks.

On his next run, Jeff again smoked off the line, losing time as the rear wheel spun all the way through first gear, but still racked up an 11.7-second time and a speed of 119.5 mph. The Suzuki could have cracked 120 mph without the headwind. Searching for more traction, Jeff dropped rear tire pressure to 16 psi. His third run was the magic one: The clocks stopped at 11.339 seconds, a new record for *Motorcyclist* test bikes. The speed was 118.9 mph.

Jeff switched to the Honda and repeated the tire-heating and staging procedures. The CBX's clutch is easier to control than the GS1100's, but Jeff still came out of the hole with the rear tire burning. The Chrondeks stopped at 12.35 seconds and 114.6 mph. Not bad for a shake-down cruise. Jeff dropped rear tire pressure to 16 psi, and on its next dash through the quarter-mile, the Honda came out of the gate on the back wheel. Jeff didn't shut off, so the front wheel didn't kiss pavement until second gear. At the end of 440 yards, the clocks read 11.84 seconds and 116.1 mph. Jeff made two more tries, but the Honda was getting hot and wouldn't go any quicker or faster.

While the two bikes cooled off, we looked at the time sheets, checked clutches and planned strategies. "Both are being slowed down a little by this headwind," Jeff figured. "That run on the Suzuki was about perfect, but I might be able to shave a tenth, maybe even two, off the Honda's time. There's no way it will go as quickly as the Suzuki though."

But by the time the bikes had cooled off and Jeff was ready to go again, that headwind was increasing in force and neither bike could run a better time, although all of each bike's set of four or five runs was under 12 seconds. It didn't matter though, the point was made: There's a new King of Quick stalking the streets of America and it wears the name Suzuki.

The next dragstrip test was the High-Speed Passing Test. Each bike rolls down the strip at precisely 50 mph in fifth gear. Exactly 200 yards from the speed trap, the rider turns the throttle on all the way and accelerates without shifting. This is about the equivalent to the distance traveled when you pass a car in top gear. The speed traps give the bike's final speed at the end of the run. The GS1100's average for three runs was 80.2 mph. The CBX was exactly one mph slower. This makes both of them pretty comparable to the 1980 Yamaha XS1100 which although slightly faster at 81.1 mph, wasn't confronted with the stiff headwind that slowed these two.

The third test for the day was supposed to be braking. However, those eight stops from 120 mph at the end of the quarter-mile runs glazed the Suzuki's front brake pads, turning the GS1100's front brake from a powerful but fairly predictable stopper into a hard-to-control grabber that could be locked with moderate pressure from just one finger at 10 mph. Nobody wanted to deal with a brake that uncontrollable in panic stops, so the braking test was scrubbed. As we put about 1000 miles on the Suzuki in the next couple of weeks, the brake became more predictable and less abrupt, but it never regained its original feel. The CBX's were strong and controllable.

DAY TWO: THE DYNO

To unlock some of the performance mysteries of these two muscle machines, we took the bikes to Webco's dynamometer. Dyno testing is interesting the first time you do it, but it loses its appeal after that. To

install a bike on the dyno, you must remove the rear wheel and bolt the bike down at the rear axle. Then using remote controls, the bike is run with the throttle wide open and a measured load is applied. How much load it can handle at a given rpm determines its power output, measured in foot-pounds of torque and brake horsepower.

The dragstrip had already told us that the Suzuki was more powerful than the Honda. The dyno spelled it out more exactly. At 86.67 horsepower and 59.73 foot-pounds of torque, the Suzuki makes over three horsepower and eight foot-pounds of torque more than the Honda. It also peaks at a lower rpm. The Four's horsepower peak is at 8000 rpm, compared to the Six's 9000 rpm. The 1100's maximum torque shows up at 6500 rpm, the Honda's arrives 1500 rpm later. Obviously the Honda is peakier, which isn't surprising. Honda almost always relies on revs to make horsepower.

The Suzuki makes more horsepower throughout the rev range. It has a three horsepower advantage when both bikes are spinning at 3000 rpm. Between 3500 and 8500 rpm, the Suzuki makes between five and 11 horsepower more than the CBX at the same rpm. It also makes between five and 10 foot-pounds of torque more than the Honda at any given rpm in the same range. It's safe to say that the Suzuki is a significantly stronger engine.

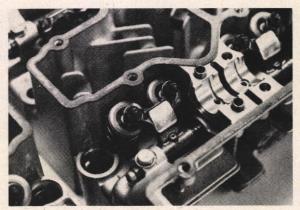
However, the Honda makes up for some of its power disadvantage with gearing. Its overall gearing is lower and at any given road speed in fifth gear, it is running at least 500 rpm faster than the GS. As a result, it is usually only two or three horsepower short of what the GS is making at any given road speed, although the Suzuki's advantage jumps to about eight horsepower at about 110 mph.

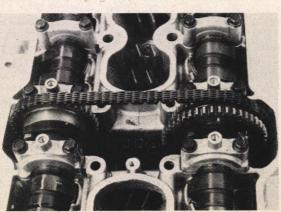
Incidentally, this 1980 CBX makes about five horsepower less than the 1978 version. This was done to drop the Six's horsepower (at the crankshaft) from 103 to 98, just under the 100 bhp maximum allowed in West Germany. Honda claims that midrange was also boosted by this move, although it didn't show up during dyno testing.

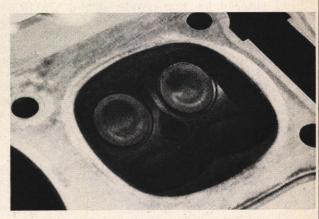
DAY THREE: THE SHOP

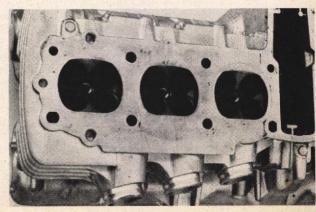
We'd charted the two Superbikes' performances, so now it was time to investigate the hardware which made the differences. First we weighed them. With the fuel tanks brimming, the Suzuki had a 51-pound advantage at 560 pounds to the Honda's 611. Obviously, a lot of the CBX's weight is in the engine. The Honda has the weight of longer camshafts, a longer crank, two more pistons, two more rods, two more cylinders, eight extra valves, two additional carbs, a jackshaft and two more header pipes. Most of these things are probably a little lighter than comparable components in the GS1100,

Suzuki's version of the four-valve head (right) has steeper valves and shallow combustion chambers. Valves are easier to adjust but they will probably need more frequent adjustment than the Honda's direct-actuation shim arrangement.









Dual Hy-vo cam chains reduce cam chain whip in the CBX. Although it has eight more valves than the GS, the CBX has less moving parts per cylinder than the Suzuki, which has the extra weight and complication of rocker arms and shafts.

but six of them still weigh more than four of the Suzuki's. The CBX engine weighs 234 pounds and although no weight is available for the GS1100 engine, it shouldn't weigh more than 15 pounds over the 199-pound GS1000 engine.

Width is another drawback to a six-cylinder engine. Kawasaki's solution on the KZ1300 was narrow bores and watercooling to narrow the cylinder block. But Honda was more concerned about crankcase width and cornering clearance, so they used a short stroke (53.4mm) and a bigger bore (64.5mm) for a displacement of 1047cc. Locating the CBX's alternator and ignition triggers on the ends of the crank, would make that area prohibitively wide. Instead, Honda uses a jackshaft behind the crankshaft to drive the 350-watt alternator, run the electronic ignition's triggers and accept the starter drive. A link-plate (Hy-vo type) chain wrapped around a sprocket in the middle of the crank and tensioned by a hydraulic damper drives the jackshaft. A simple clutch on the left end of the jackshaft protects the alternator from the engine's sudden acceleration or deceleration. The jackshaft drives the clutch via a gearset. A chain behind the clutch drives the oil

The GS1100's lower end looks like a beefed-up GS1000. Suzuki has started using one-piece cranks in some of their bikes this year, but the 1100 uses the more expensive builtup type which is part of the company's two-stroke heritage. Suzuki has the experience and tooling to build roller-bearing cranks, but they are changing gradually to the more popular and less expensive plain bearing type instead of converting all their bikes to them in one year. The crank in the 1075cc four is stronger and has a longer stroke (66mm vs. 64.8mm) than the GS1000's. The 230-watt alternator is mounted on the left end of the crank, and a trigger for the electronic ignition (which replaces the breaker-point type on all 1980 GS models) is on the right end. Helical gears drive the enormous 18plate clutch. The transmission is very similar to the GS1000's, even using some of the same ratios. However, the 1100's transmission pieces have a higher nickel content (2.0 percent instead of 1.6) for improved shock absorption.

The Suzuki drives its twin-overhead camshafts with a single roller chain, tensioned by an automatic tensioner. The Honda uses a link-plate chain to drive the exhaust cam. A second link-plate chain riding on its own sprockets runs between the two cams to operate the intake cam. This design permits the use of shorter

chains which are less likely to whip and have tensioning problems. Actually, each of the Honda's cams is two shafts joined in the center of the engine by an Oldham coupler.

Honda started the four-valve-percylinder trend in modern motorcycles, and as a showcase of technology, the CBX was destined to have 4VPC. The four-valve layout allows smaller, lighter valves for better valve control. Flow is also improved with two smaller valves instead of one larger one, and heat is more readily transferred out of the valves through increased valve seat and guide area. The 4VPC system also permits a centrally located spark plug for improved combustion.

The CBX uses two 25mm-intake valves and two 22mm-exhaust valves per cylinder. The valves are set at 31.3 degrees, have fairly long stems and ride directly against the cam lobes *via* buckets and adjusting shims. Lift on both sides has been decreased 0.5mm this year. The intake's valve lift is now 7.8 and the exhaust's is 7.0mm.

The GS1100 also uses a 4VPC combustion chamber design but with Suzuki's own embellishments. The valves are larger in diameter (27 and 23mm), shorter, and set at a shallower angle-22 degrees. Lift is 7.0mm all around (or possibly 6.5mm for the exhaust, U.S. Suzuki wasn't sure). However, unlike the CBX and all other DOHC Japanese engines since the CB450, the GS1100 (and the new GS750) uses short forked rockers to operate the valves-one rocker for each pair of valves. This system also employs screw-type lash adjusters, so no special tools or extra shims are needed to adjust the valves.

Besides shorter valves—which means lighter valves and stronger stems—the Suzuki system of valve operation has several attractions. The cams can be set lower in the head to reduce engine height and lower the center of gravity minutely. The shallow valve angle also means that less of the valve guide pokes into the ports to interfere with mixture flow—although it also means that the port must make a tighter turn just outside the combustion chamber.

The major reason for all this valvetrain irregularity is to be found in the rather shallow combustion chambers. Each intake valve is set in its own semi-hemispherical depression. During the intake cycle these depressions (each of which takes up about a quarter of the combustion chamber surface) channel the incoming mixture in such a way as to accelerate the pair of high-speed swirls normally found in the incoming mixture of 4VPC engines. The squish areas of the combustion chamber are de-

OFF THE RECORD

When you spend \$3500 to \$4000 for a motorcycle, it had better do more than provide you with basic transportation and a little weekend fun; it's got to massage your ego into silly putty every single minute you're aboard it. I was all pumped and primed for Suzuki's masseuses to do a brain-boggling tap dance on my head. I could just envision the effect that the exotic 16-valve head would have on those hip bimbos at the local burger drive-in-they'd all be drooling with envy. I could just casually point down at the emblem on the side and all the waitresses would flock like bees to honey. And knowing I had the quickest, the fastest and the meanest motorcycle that money could buy, I could snicker, laugh and toy with anyone on the road.

Man, I was ready for the ultimate ego trip. But for some undetermined reason, the GS1100 never quite rang my bell; in fact it never even lit my fuse. Sure it's ungodly fast and a nice piece (if you're into weaponry), but take away the emblems and it looks-and sounds-like any other mass-produced four-cylinder. Once the initial horsepower high wore off, there really wasn't anything significant about the 1100 that held me breathless. I don't care what all the pros and cons are; in my book the CBX supplies the ultimate high. In spite of being two years old, it always stole the show whenever the two bikes were parked side by side. There is something captivating about the CBX's configuration, something soothing about its mesmerizing smoothness and something absolutely magical about that exhilarating whine from the engine; I swell with pride at every twist of the throttle and every flick of the gear lever. -Rich Cox

Like the rest of the staff, I wouldn't run out and buy either of these bikes if I was going to buy a big street bike today. I'd choose a GS1000E or a CB750 long before I'd buy one of these-even if the price was the same. If I had to choose? Well, for me the choice comes down to a nice engine or a nice chassis. Although the CBX doesn't make as much power as the GS1100, the six-cylinder mill is much smoother the way I ride and makes the most pleasant sound in motorcycling. That quick-revving zoop-zoop of its exhaust is worth the extra cost. It also has a bullet-proof clutch and brakes and isn't troubled by the abrupt throttle response and annoying drivetrain lash which hassles you on the 1100.

The Suzuki's chassis is undoubtedly more comfortable and nimble, and normally that would persuade me to buy the GS. But there are too many little annoyances. I think I could set up the CBX chassis to my tastes, and I know that Ontario Moto Tech or somebody could install as much power as I thought I wanted in the CBX. Finally, I know that I'd only find use for the Suzuki's handling edge once or twice a week. I'd appreciate the civility of the CBX's engine every day. So I'd choose the CBX. —Art Friedman

The automobile equivalent of these two bikes is a \$35,000 Turbo Carrera, which either of them can out-accelerate.

signed to further accelerate these swirls during the compression stroke and thereby expose the maximum possible amount of fuel/air mixture to the spark plug to fan combustion. Suzuki claims that by thus speeding up combustion they can increase power, reduce the possibility of detonation and burn more of the air/fuel mixture. Because the combustion chamber is shallow and not domed, there don't seem to be any pockets where the mixture can be trapped and stagnate.

The piston crown is also extremely flat-flatter even than the fairly flat CBX piston crown-and Suzuki suggests several benefits of this feature. There's no dome to interfere with mixture flow and since the piston crown's surface area is reduced, there's less area to absorb heat and pass it to the rings and oil. To this end, the top ring is located low on the piston to keep it away from combustion heat. To get a respectable 9.5:1 compression ratio (compared to the CBX's 9.3:1) with the flat piston crown, the shallow valve angle and low-volume combustion chamber were necessary.

Suzuki is extremely proud of their patented "Twin Swirl Combustion Chamber" (TSCC) design and they're pushing it hard as the GS1100's main technical innovation. They claim that it requires less ignition advance and that with equal valve sizes the TSCC head will put out more horse-power per liter than Honda's "Pentroof" 4VPC design. The performance data seems to back them up.

Of course, the Suzuki can boast features besides just those in its engine. Like the CBX, the Suzuki's fork is an air-boost design, although the Suzuki's leading-axle Kayaba unit has 2.0mm bigger stanchions and 1.6 inches more travel than the Honda's center-axle Showa fork. In addition, the 1100's fork has a few extra gadgets, like four-position adjustable rebound damping. By turning a knob at the bottom of each fork slider, you can line up one of four holes of varying sizes with an oil passage to select more or less restriction. The GS also has a three-position spring preload collar on the top of each fork leg, which means that the air filler valve had to be located elsewhere. A hole in each stanchion just above the lower triple clamp is covered and sealed by another clamp. A hole in this clamp leads to an air passageway and is sealed from the passageway by a tapered bolt and an O-ring. The air passageways on the two stanchion tubes are connected by a small hose. The filler valve is on the left clamp. To fill, you back off the two sealing bolts to open the passageways. When you've set the desired pressure (up to 36 psi), you retighten the bolt to keep the fork legs from pumping oil into each other. If it seems complicated, it is. It usually took a little longer to set air pressure in the GS fork than to fill the two unconnected fork legs on the CBX (7 to 13 psi recommended).

The Suzuki has shocks with the same four rebound damping adjustments as the GS1000. The Honda only has three rebound damping settings, but it goes the Suzuki one better with its two-position compression damping adjustment.

This year the CBX's plastic swingarm bushings have been replaced with a double-row ball bearing on the right and a needle bearing on the left. The pivot bolt has been enlarged 2.0mm in diameter to 16mm and threads into the frame for strength. The swingarm itself has been strengthened slightly with thicker gusset plates. However, the CBX's swingarm looks pretty wimpy next to the huge extruded aluminum swingarm on the GS1100. It rides on needle bearings. Both bikes have tapered roller bearings in the steering heads. They also share V-rated tires and triple disc brakes. The Honda's tires are tubeless, and the Suzuki's discs have a series of slots designed to wipe the pucks clean.

The CBX has an oil cooler, which the GS lacks, and that cooler has been enlarged this year. However, the 1100 is the first Suzuki with special holes drilled and tapped in the crankcase to plug in an oil cooler. Previously, the difficulty of plugging an oil cooler into a Suzuki has driven some cooler makers to supply hookups for GS models which routed the oil around the top end and filter.

There's no gear indicator on the GS1100E, but it does have a special idiot light panel consisting of a drawing of a motorcycle profile with warning lights for brake light, taillight, headlight, rear brake fluid level and battery fluid level. The most useful of these is the battery fluid level light which uses a sensor built into the battery to warn when fluid is low. thereby saving the owner the trouble of removing the airbox to check the battery. Like the CBX, the GS also has separate lights for oil pressure, high beam, turn signals and neutral. The CBX has a voltmeter and the GS has a fuel gauge. Both machines

have combined ignition/fork locks.

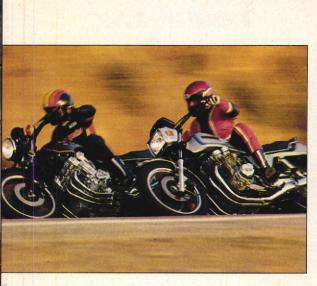
Honda has made arrangements with an insurance company to provide specially priced motorcycle insurance through their dealers to make it easier for people to afford a Honda. The CBX also carries two fringe benefits of this alliance. To reduce theft, the insurance company wanted the expensive CBX to have a lock. So there's a cable which wraps around a pole or post at one end and attaches to the helmet lock on the other. A short chain is provided to also secure your helmet. The cable is fairly convenient to use and it will discourage amateur or poorly equipped thieves. Of course, like almost anything, it can be sabotaged, but it makes the bike harder and more time-consuming to steal. Part of the cable's convenience comes from the locking compartment to hold it, which is located in the tail section. The door on the top of the seatback makes the compartment a convenient place to store maps, gloves, etc., because to open the compartment you don't need to remove any bungee cords you might have strapped over the seat.

Honda has reason to hope that any insurance break will lower the cost of owning a CBX. The Six's \$4198 price puts it at a \$529 disadvantage to the GS1100E, which goes for a suggested \$3669. The slightly simpler Suzuki will probably also be cheaper to have serviced.

DAY FOUR: THE MOUNTAINS

One of the nice things about living in Los Angeles is the fact that the city is bordered by mountains. This string of mountains is what makes L.A. a smog trap, but those geological wrinkles are also a great place to

Feeling out the limits of these two asphalt-burning, pavement-wrinkling monster machines provided us with all sorts of excitement. Here Ken and Rich abuse the footpegs in the Santa Monica mountains and Jeff gets some traction during a dragstrip launch. During a lull in the action our mountain-road racers eyeball the Suzuki's sleek bodywork. However, styling subtletles are overlooked when gawkers spot that big, wide Honda CBX engine.











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ride motorcycles. The hills and canyons are chock-full of little-used roads which seem to have been created especially for sporting bikes.

We're not advocates of whiteknuckled, tight-lipped, bar-beveling, serious-as-a-heart-attack street racing. We figure that if you want to ride at ten-point-one tenths, then the best place to do it is the racetrack, where you can minimize the possibility of becoming dead, or arrested, while getting down to some all-out kneedragging. On the other hand, we figure that some properly cautious pegscraping with trusted companions on deserted back roads is an enjoyable way to spend the day. And what better way to straighten some of our favorite mountain-road kinks and explore new ones than on these two motorcycles.

We considered a racetrack outing, but not many people ever ride there, so what was the point? And the racetrack, though ideal for telling you how a bike corners at 120 mph, has certain drawbacks. You always know what's around the next turn, so you don't discover certain characteristics of the bike. For example, you never get caught by decreasing radius corners on a racetrack, but they are a normal part of country-road riding. Therefore you never find out how a bike works in corners that tighten up unexpectedly—or in unseen bumps,

slippery white lines, unplanned panic stops, etc.

For optimum handling on these twisty back roads, we inflated the front forks to 13 psi on the CBX and 18 psi on the GS. We dialed in maximum damping (No. 4 position) on the GS fork, set both sets of shocks one level below maximum preload, dialed the Suzuki's shock damping to the No. 3 or 4 position and the Honda's shock damping to No. 2 or 3 on the top (rebound) setting and No. 2 on the bottom (compression) setting. We found that the Suzuki's fork preload adjusters were best left at their softest settings.

Even with the suspension set up this way, the CBX was not a particularly stable motorcycle when cornering briskly. It was easy to get the bike to wiggle when cornering at 60 or 70 mph, especially if it hit a bump in the road. This oscillation wasn't alarming or uncontrollable and in fact you could go much faster after it started without having it get any worse. However, you couldn't help but notice the wiggle in the bars.

The Honda's steering wasn't as accurate as the Suzuki's when rushing around a bend, although the CBX was quite acceptable until it began to wiggle. You also had to put more effort and concentration into steering the Six than you did into steering the Suzuki. You noticed the extra effort

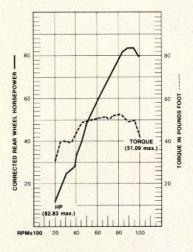




Warning panel on lower right of GS dash (top) monitors everything but charging. The CBX's only special instrument is a voltmeter to check charge. Both panels are lit in red.

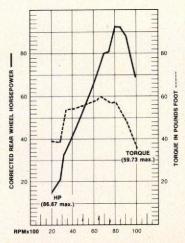
HONDA CBX

HP	TORQUE
11.48	30.14
18.30	38.44
22.60	39.56
26.05	39.09
33.79	43.71
39.55	46.16
46.73	48.93
52.20	49.85
57.33	50.34
62.48	50.49
66.87	50.18
72.09	50.63
77.83	51.09
81.91	50.17
82.83	48.34
82.83	44.95
79.13	41.56
	11.48



SUZUKI GS1100

RPM	HP T	ORQUE
2000	14.86	39.02
2500	18.41	38.67
3000	26.10	45.70
3500	34.87	52.33
4000	40.93	53.74
4500	46.95	54.80
5000	52.84	55.51
5500	58.87	56.21
6000	66.23	57.97
6500	73.92	59.73
7000	78.67	59.03
7500	81.25	56.90
8000	86.67	56.90
8500	86.44	53.41
9000	84.30	49.18
	78.16	
10000		



HONDA CBX SUZUKI GS1100





Suggested retail price	\$4198	\$3669
Warranty	6 months, 6000 miles	12 months, unlimited mileage
Number of U.S. dealers	1787	
Cost of shop manual	\$14.60	None available
ENGINE		
Type	Four-stroke DOHC six	Four-stroke DOHC four
Displacement	1047cc	
Bore x stroke	64.5 x 53.4mm	72 x 66mm
Compression	9.3:1	9.5:1
Carburetion	6, 28mm Keihin CV	4, 34mm Mikuni CV
Ignition	Transistorized pointless	Transistorized pointless
Lubrication	Wet sump, trochoidal pump	Wet sump, trochoidal pump
Lighting output	350 watts	230 watts
Battery	12V, 18AH	12V, 14AH
DRIVETRAIN		
Primary transmission	Hy-Vo chain/jackshaft,2.27:1	Spur gear, 1.775:1
Clutch	13 plates, wet	18 plates, wet
Final drive	% x % (No. 530) RK endless chain,	34 x 36 (No. 630) D.I.D. endless
CHACCIC	42/18, 2.33:1	chain, 42/15, 2.8:1
CHASSIS	05	
Fork	35mm Showa, 6.3 in. travel	37mm Kayaba, 7.9 in. travel
Shocks	Showa, 3.9 in. wheel travel	Kayaba, 4.25 in. wheel travel
Rear tire	3.50-19 Dunlop Gold Seal F11	3.50-19 Bridgestone Mag Mopus L303
Rake/trail	4.25-18 Dunlop Gold Seal K127	4.50-17 Bridgestone Mag Mopus
Wheelbase	27.5°/4.7 in. (119mm)	28°/4.06 in. (103mm)
Seat height	32.0 in. (813mm)	61.0 in. (1549mm) 31.75 in. (806mm)
Ground clearance	7.0 in. (178mm)	6.0 in. (152mm)
Fuel capacity	5.3 gal. (20 liters)	5.0 gal. (19 liters)
Wet weight	611 lbs. (277kg)	560 lbs. (254kg)
GVWR	1055 lbs. (479kg)	1030 lbs. (254kg)
Colors	Black, red	Silver, metallic red
Instruments	Speedo, odometer, tach, resettable	Speedo, odometer, tach, fuel gauge,
	tripmeter and indicator lights for	resettable trip meter, indicator
	high beam, neutral, turn signals	lights for neutral, high beam, turn
	and low oil pressure	signals and low oil pressure. Check
		panel for headlamp, battery, taillamp
		stop lamp and low brake fluid.
PERFORMANCE		
Power to weight ratio, unladen	8.4 lbs./hp	6.5 lbs./hp
Fuel consumption	29 to 41 mpg, 35.1 mpg average	36 to 45 mpg, 41.9 mpg average
Average touring range	186 miles	210 miles
Quarter-mile	11.84 sec. at 116.1 mph	11.34 sec. at 118.9 mph
RPM at 60 mph in top gear	4400	3800
Speed in gears at (redline)	(9500) 1st 56 mph;	(9000) 1st 54 mph;
	2nd 79 mph; 3rd 99 mph;	2nd 76 mph; 3rd 98 mph;
	4th 115 mph; 5th 133 mph	4th 120 mph; 5th 141 mph
Speedometer error	30 mph, actual 30;	30 mph, actual 29
	60 mph, actual 60	60 mph, actual 58

Shoei splashes into 1980 with another fiberglass first! The S-28.

A super-new helmet featuring style and comfort in five hot colors, a ratcheting variable pause visor and plush nylon interior!

The Shoei S-28.

Good design like this should go to your head.



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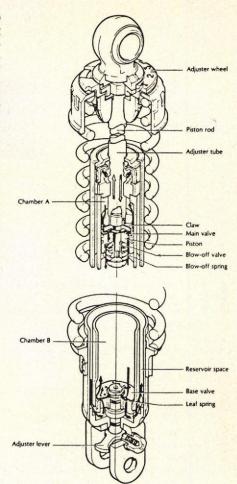
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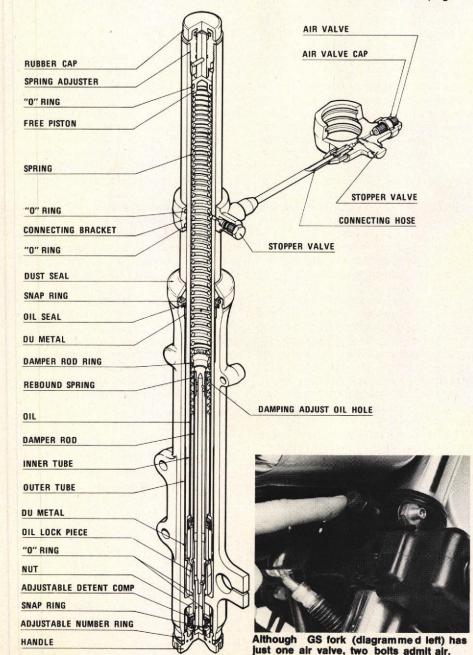
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when braking into a closing radius turn, where the CBX tried to sit up more than the GS. The same high-center-of-gravity feeling contributed to the sluggish sensation in the handling when you were trying to make a rapid transition from turning one direction to turning the other, as in an S-bend. However, the handling isn't nearly as heavy as the appearance of that huge engine might lead you to expect. The Honda did have a couple of advantages, useful primarily in medium-speed corners. Its Japanese Dunlops seemed to stick a little better than the GS1100's Bridgestones, which was a good thing since the CBX has quite a bit of cornering clearance-significantly more than the GS1100.

The Suzuki steers with remarkable accuracy and ease at low and moderate speeds. However, it still requires a fair amount of effort to pull

down into a corner that tightens up unexpectedly; you never forget that you're riding a big motorcycle. However, the bike does handle comparatively lightly-lighter than the CBX and perhaps even lighter than the GS1000E. Despite that lightness and despite having over half-an-inch less front wheel trail than the CBX, the Suzuki 1100E is more stable than the Six. The stability stays with it through some fairly fast corner-charging, but when we got down to going real fast, the GS1100 began to wallow around. The problem seemed to come from the rear suspension, which was just a little soft. Most people will never ride it that hard and it keeps its handling better controlled than the CBX's. However, it's easier to drag bits of the GS1100's underside, and if you don't inflate the forks enough. one of the first things that drags is continued on page 80







CBX shock (diagrammed above) has lever in clevis to set compression damping.



Just turn the plastic knob at the bottom of the GS fork to set damping rate.

BUYEF GUIGE

ow do you go about selecting a fresh tire for your motorcycle? Do you wander into your neighborhood dealer and gaze at his crowded rack of compounds in confused desperation? Maybe you drag a buddy along for some advice? Chances are he doesn't know any more about choosing the right tire than you do. And you know better than to ask the hovering salesman; he'd sell you whitewalls for your TZ if he could. Unfortunately there's hardly anybody who can tell you which tire to buy. You are your own best advice. You're the only one who knows your preferences, your riding habits, and, of course, your budget.

Too many riders buy tires on someone's advice and end up disappointed with their performance. But it's not always the tire's fault. In most cases they weren't designed to do what the purchaser intended. To avoid this expensive exercise, it is best to avoid the sometimes myopic advice of friends. Granted there are dozens of manufacturers with hundreds of different models between them, but don't let that discourage your search. The right tires make all the difference in the world.

To arm yourself for the right decision, you first have to know how to read a tire: Its coded description can tell you a lot more than just physical size. Breaking this code can be a challenge because there is more than just one system. The Japanese manufacturers use the inch system, for example 3.50-18. This size designation indicates that the tire is (inflated) 3.5 inches wide (at its widest point), and 3.5 inches high (from the bead to the center tread surface). Therefore these cross-sectional dimensions (aspect ratio, or profile) are square. Where the aspect ratio (height divided by width) is less than 100 percent, or round, the Japanese add .10 to the size designation; thus a 3.50-18 becomes 3.60-18 lowprofile. On the other hand, the American alphabetical-numerical and European metric systems describe profiles more accurately. For example in the metric size 90/85H18: The first number, 90, indicates a width of 3.5 inches. The aspect ratio, represented by the second number, 85, is 85 percent, (height is 85 percent of the width). The following letter, H, is a speed rating. There are four possible speed ratings, determined through controlled laboratory testing where a tire is subjected to six hours of constant simulated highway speeds. Most of the American tires and some of the Japanese brands have no letter designation, which indicates that they have been DOT tested for sustained speeds up to 93 mph (150kph). An S rating indicates safety at continuous speeds up to 112 mph (180kph). An H rated tire is able to handle sustained speeds up to 130 mph (210kph) and finally the highest rating, V, can withstand constant speeds of up to 150 mph (240kph).

These speed designations and aspect ratios (where indicated) are common to all three coding systems. The final number in our example, 18, dictates rim diameter. In some instances you may find the letters A or T following the last number. These tires have a special tapered bead such as those found on some Harleys and Hondas.

Besides the manufacturer's size designation, each tire is DOT tested for strength and stamped with a *Ply* Rating and *Load Capacity*. The Ply rating doesn't necessarily represent the true number of plys. Instead it represents a standardized strength level. Most tires are Four-Ply rated. Load capacity, designated in pounds on the tire, should match the intended motorcycle's GVWR.

In your quest for the proper tires, take into consideration the different compounds and carcass shapes as each is designed to fulfill a specific purpose. If you wear your tires out on the cornering tread first, you

3.75..... —MM 4.00.....100MN 4.25.....110MP 4.50..... —MR 4.75.....120MS 5.00.....130MT

surely don't want a harder high-mile-age compound. If you spend most of your miles vertical, you'll want a flatter profile, one that offers an enlarged contact patch for better mile-age, increased load capacity, better braking and straight-line stability. A triangular profile provides maximum contact at severe lean angles, but doesn't have as wide a footprint between vertical and maximum lean. Round profiles combine the best of both worlds and are universally suitable for most street applications.

Some of the tires listed in this guide are commonly available in both tube or tubeless styles. In such cases, we have labeled them (T) or (TL) after the tire's coded number.

The information herein is only a drop in the tire-science bucket. The immense complexities involved in designing and manufacturing a street tire are staggering. We couldn't possibly hope to cover all the technical aspects, but by using these guidelines, charts and photos, you should have all the information needed to choose a tire that best fits your needs. If your dealer doesn't have it, ask him to order it from the manufacturer or distributor listed in the directory herein. All prices are suggested retail and do not include Federal Excise Tax.

Nomenclature Conversion Table And Rim Width Chart

Inch	Metric	Alphabetic Numerical	cal S	uggested im Width
2.25	—	ME	WMO	1.50-inch
2.50	60	MF	WM1	1.60-inch
	75			
3.00	08	MH	WM2	1.85-inch
	90			
3.50	90	ML	WM3	2.15-inch
3.75	—	MM		
	100			
4.25	110	MP	WM4	2.50-inch
4.50		MR		
4.75	120	MS		
F 00	100	NAT		



AVON Model Size 130/90H16 Road 130/90H17 runner 80/90H18 90/90H18 100/90H18 110/90H18 120/90H18

Price Remarks \$59.95 Front or rear: tube type, 66.50 high performance tire, 47.65 reinforced shoulder 49.35 blocks, high-speed 54.45 touring. 56.95 61.50

90/90H19 Road runner 100/90H19

50.65 Front: tube type, high 56.55 performance tire, reinforced shoulder blocks, high-speed touring.



BRIDGESTONE

Model Size Price Remarks S708 3.50H18 \$35.08 Rear: tube type, high 4.00H18 42.34 mileage tire, designed Mag 4.50H18 48.51 to resist tracking in Mopus 55.24 rain grooves. 5.10H17 5.10H18 4.25H18 52.55 Rear: tubeless tire, G504 high-speed, superbike Mag applications. Mopus 3.25H19 (TL) 38.85 Front: tube or tubeless S703 3.50H19 (T) 36.93 all-weather tire, tread channels water away from contact patch.



CARLISLE

Model Size Price Remarks \$51.85 Rear: tube or tube-Arrow 130/80H18 48.80 less, sport-touring. ST 110/80H18 140/80H18 49.50 120/80H17 47.40

Model Size Price Remarks 130/80H16 51.70

Arrow 90/90H19 43.90 Front: tube or tube-110/90H19 44.98 less, ribbed, matched to rear.



CHENG SHIN

Model	Size	Price	Remarks
C180	3.00-17	\$24.00	
d.	3.25-17	25.85	
	3.50-17	27.45	
	3.00-18	22.43	ment applications.
	3.50-18	29.20	
	4.00-18	41.00	
	4.50-18	44.50	
	3.00-19	25.30	
0101	3.50-19	30.20	
C184	4.75/90H17		Rear: tube type, high
	3.50/90H18	N.A.	mileage tire, rain chan-
0400	0.05 (05040	05.05	neling center groove.
C193	3.25/95\$18	25.95	
	3.75/95\$18	30.85	high mileage tire.
	4.00/95\$18	41.00	
	4.60/95S18	44.50	
C198	3.50/95H18		Rear: tube type, high
	4.00/95S18		
	4.50/95H18		shoulder blocks.
C199	5.10/85\$16		Rear: tube type high
	5.10/85H16		mileage tire.
	4.50/85H17	42.85	
	3.75/85S18	41.70	
	4.25/85S18	41.70	
	4.60/85H18	44.10	
C200	5.10S16	42.83	Rear: tube type, high
	5.10S18	48.85	mileage tire, link
			block tread pattern.
C223	2.50/90S18	15.30	Front: tube type, high
	2.75/90S17	18.80	mileage tire, sectioned
	3.50/90S19	28.70	rib pattern.
	3.00/90S19	25.30	
	3.60/90S19	30.20	
C266	4.10/80H19	35.00	Front or rear: tube type,
			sport touring.
C701	5.10/85H16		Rear: tube type,
	5.10/85H17		large displacement
	3.60/85\$18		touring applications.
	4.10/85H18	43.00	
	4.60/85S18	44.50	
	5.10/85H18	48.85	
C766	4.10/80H18	38.70	Rear: tubeless, high
	4.60/80H18	43.85	mileage touring tire.
	5.10/80H18	52.00	
C-RIB	2.25-16	11 50	Front: tube type,
0 1110	2.75-16		round profile, ribbed
	3.00-16		tread pattern for
	3.25-16		maximum straight-
	2.25-16		line stability, small
	2.50-17	14.30	displacement applica-
	2.75-17		tions.
	3.00-17	18.05	
		.0.00	



CON	IINENIAL		
Model	Size	Price	Remarks
RB2	3.00S18 (T)	\$39.37	Front: tube or tubeless,
	3.25H18 (T)	43.92	round profile for maxi-
	3.50H18 (T)	48.83	mum contact, blocked
	3.25H19 (T)	49.58	shoulders for cornering
	3.25H19 (TL)	54.53	stability, center water
	3.50H19 (T)	53.52	relief channel.
	3.50H19 (TL)	58.87	
	3.50V18 (T)	53.72	
	3.50V19 (T)	58.87	

K112 MT/90S16T (T) 63.50 Rear: tube or tubeless, MT/90S16T (TL)69.85 matchforRB2, designed 4.50H17 (T) 62.84 for high-speed touring, 4.50H17 (TL) 69.14 large displacement 3.50H18 (T) 51.99 applications. 4.00H18 (T) 59.30 4.00H18 (TL) 65.23 4.25/85H18 (T) 60.93 4.25/85H18 (TL)67.04 120/90H18 (T) 68.14 120/90H18 (TL)68.14

4.50V17 (T) 69.14 120/90V18 (T) 68.14



DUNL	OP.		
Model	Size	Price Remarks	
K91	MT/90-17	\$74.78 Rear: tubeless touring	ng
Mark II	4.25/85V18	64.81 tire, Kevlar belte	d
	MT/80-18	69.40 construction for max mum mileage and loa capacity, superbik applications.	d
K91	4.10V19	57.38 Front: tubeless, no	n-
Mark II		belted constructio	n,
Ribbed		match for MK II rea	ır.
K81	3.60H18	41,97 Front or rear: tubeles	SS
(TT100)	4.10H18	48.82 tire featuring trigon	ic
	4.25/85H18	52.44 profile for maximu	m
	3.60H19	44.60 contact up to 45-	
	4.10H19	49.87 degrees lean, middl	e-
		weight applications.	
K81R	3.60H18	47.00 Front or rear: "F	"
	4.10H18	54.68 designates specia	al
	4.25/85H18	58.74 street-legal racin	g
	4.10H19	55.84 compound designed for maximum cornering adhesion.	or
K81	MT/90-16	55.02 Rear: tubeless tir	е
Mark II	5.10H18	57.21 designed with round	

Model	Size	Price	Remarks
			profile than K81 for
K81	5.10H18	65.79	Control of the Control of the Control
Mark IIR			superbike applications.
K81	4.10H19	52 27	Front: tubeless tire
Mark II	4.10019	33.31	designed for steering
K81	4.10H19	59.78	control at maximum
Mark IIR			angles, semi-rib design
			for low rolling
			resistance.
K127	130/90S16 (TL	163 30	Rear: tube or tubeless
KIZI	4.60S16 (T)	49.53	tire, high-performance
	4.00H18 (TL)	57.71	super-bike design. O.E.
	4.25V18 (TL)	66.81	on Honda CB750F and
			CBX.
K100	4.50V17	76.96	
	MT/90-17	76.96	
			recommended match: F8.
K227	4.50H17	69.28	The state of the s
RZZI	4.501117	03.20	mileage touring tire,
			water relief grooves.
K87	MT/90-16	48.82	Front or rear: tube tire
Mark II	4.50H17		designed for maximum
	4.00H18	45.81	A STATE OF THE PARTY OF THE PAR
1/07	0.50040	27 50	touring applications.
K87	3.50S18 4.00S18	41.26	Rear: same character- istics as K87 MK II, de-
	4.00310	41.20	signed for middle -
			weight applications.
F11	3.50S18 (T)		Front: tube or tubeless,
	3.25H19 (TL)		match for K127.
	3.50V19 (TL)	55.16	
F8	MN/90-18 (TL)	53 21	Front: tube or tubeless,
	3.50H19 (T)		semi-ribbed tread,
	3.50V19 (TL)		match for K100 or
			K227.
F6	3.50H18		Front: tube type,
	3.25H19 3.50H19		superbike applications, match for K87 MK II.
	3.50019	42.12	match for Nor MK II.
F7	3.00S18	25.56	Front: tube type, ribbed
	3.25H19	34.72	pattern for precise
	3.50S19	35.66	steering response,
50	0.05040	07.74	superbike applications.
F3	3.25S18	27./1	Front: tube type, same as F7, middleweight
			applications.
K70	3.50-18	38.68	Front or rear: tube type,
	4.00-18		all-purpose tread pro-
			vides traction on naved



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FORM	IULA		
Model	Size	Price	Remarks
Freestar	5.10H16	\$59.85	Rear: tube type, high-
	5.10H17	51.95	mileage touring, avail-
	3.50H18	41.95	able in raised white
	4.25H18	47.95	letters, semi-rib tread.
	4.60H18	50.95	
	5.20H18	54.95	

vides traction on paved or unpaved roads.

Model	Size	Price	Remarks
Freestar	3.25H19	38.95	Front: tube type,
	3.60H19	39.95	same design as Free-
	4.10H19	42.95	star rear.
F 752	5.10S16	42.20	Front or rear: tube
Mover	5.10S17	43.20	type pattern similar to
	3.50S18	33.20	Dunlop K81, micro
	4.00S18	37.20	grooves in tread
	4.25\$18	38.20	absorb water for added
	4.50S18	41.20	safetyinwetconditions.
	5.20S18	44.20	THE RESERVE THE PARTY OF THE PA
	3.25S19	32.20	
F 753			
Rib	3.00S18	26.20	Front: tube type, round
	3.25S19	32.20	profile, designed for
	3.50S19		straight-line stability
			match for F 752 Mover
F 741	3.50-18	31.20	Front or rear: tube type
Universa	1 4.00-18	35.20	round profile, deep
	4.25-18	36.20	water channels for
	4.50-18		wet weather adhesion.
	3.25-19	30.20	
	The second secon	200	



G00	DYEAR
Model	Size

	GOOL	TEAR			
	Model	Size		Price	
1	Eagle	MJ/90-18	\$	61.00	Front: tubeless tire,
i	HST	MJ/90-19		54.80	high speed touring,
	Rib	MM/90-19		57.20	raised white letters
					available (allow \$10
					to \$15 more).
1	Eagle	MM/90-19		57.20	Front: tube type, non-
	HST	111111111111111111111111111111111111111		01.20	rib tread pattern.
	1101				The troud pattorn.
	Eagle	MT/90-16		68.40	Rear: tubeless tire,
	HST	MT/90-17		71.30	
	noi	MI /90-18		64.50	9
		MP/90-18		72.40	
				CONTRACTOR OF THE PARTY OF THE	available.
ı		MS/85-18		73.10	
	Carlo	MT (00 40	(T)	00.00	D
١	Eagle	MT/90-16			Rear: tube or tubeless,
	G-T II				high mileage touring
		MT/90-17			tire featuring safety
		MT/90-17		75.40	bead.
1		MN/90-18		60.25	
		MN/90-18			
		MR/90-18	(T)	64.20	
		MR/90-18	(TL)	70.10	
		MP/85-18	(T)	70.80	
	Eagle	ML/90-19	(T)	51.15	Front: tube or tubeless,
	G-T	ML/90-19	(TL)	63.75	safety rib design, used
	Rib	MN/90-18	(TL)	67.10	on many Kawasaki
					police bikes.
	Eagle				Rear: tube or tubeless,
	G-T	MN/90-18	(TL)	73.10	match for G-T Rib.
	Eagle	MT/90-16		53.45	Front or rear: tube type,
	A/T	MN/90-18			all-purpose economy
		MR/90-18		50.75	street tire, raised white
		MJ/90-19			letters available.
		ML/90-18		41.60	
	MARKET S				
	Eagle	MJ/90-18		38.35	Front: tube type,
	A/T	MJ/90-19			ribbed for precision
	Rib				steering accuracy.



IRC			
Model	Size	Price	Remarks
GS-11	3.00S18	\$39.50	Front: tube type,
All	3.25\$18	N.A.	designed to provide
Weather	3.25H19	43.29	maximum performance
	3.50H19	46.33	during high-speed
	3.25V19	52.43	cornering and long
	3.50V19	57.68	distance touring.
	90/90H19	43.49	Original equipment on
	100/90H19	53.62	much of the Suzuki GS
	3.60S19	N.A.	series.
GS-11	3.50\$18	43.49	Rear: tube type, low
All	3.75H18	47.12	profile designations
Weather	4.00H18	49.66	are 80-percent aspect
	4.50H17	74.21	ratio.
	5.10H18	53.88	
	5.10H17	50.91	
	4.00V18	60.09	
	4.50V17	84.28	
	130/90H16	79.00	
	4.60S16	N.A.	
GS-12	MT/90-16T	57.32	Rear: tube type,
Grand			designed for maximum
High			mileage and load
Speed			capacity.
Road	3.60H19	39.50	Front: tube type, de-
Winner	4.10H19	45.67	signed for positive
HS-200			steering during high-
			speed cornering, 80-
			percent aspect ratio.
Road	5.10H17	47.78	Rear: tube type, 80-
Winner	4.10H18	43.49	percent aspect ratio.
HS-200	4.60H18	49.26	
	F 401140		

50.95



Perfect 4.50V17 3.50V19

5.10H18

METZ	ELER	
Model	Size	Price
Rille 14	3.25V19	\$58.00
	3.50V19	51.95
	3.60V19	66.00
	3.60V18	66.00
Rille 16	100/90H16	60.00

Price Remarks
\$58.00 Front: tube type,
51.95 designed for maximum
66.00 traction during corner66.00 ing, original equipment
on BMW.
6 60.00 Rear: tube type, same
design purpose as Rille
14.
65.00 Front and rear: tube
54.00 type, designed for

Model	Size	Price Remarks high-speed tra- round profile.	ction
Touring	4.00H18	63.00 Rear: tube type	, de
Speed	110/80H18	59.00 signed for high	1-
	120/90H18	58.95 performance, hig	h-
	130/80H18	60.00 speed sport tour	ing.



-	10	u		AI
IAI	IC	П	L	N

	ELIN		
Model	Size	Price	Remarks
M45	3.50H18	\$44.50	Front and Rear: tube
	4.00H18	49.85	type, for wet and dry
	3.50H19	52.80	adhesion, semi-flat
	4.25/85V18		tread for enlarged
	3.50V18		contact patch, for
	3.50V19		500cc to superbike
			applications.
M38	3.25\$18	N.A.	Front and rear: tube
	3.50S18	N.A.	type, designed for brak-
	4.00S18		ing and straight-line
	3.25\$19	N.A.	stability, lighttomiddle-
	3.00-18R38		weight applications.
	3.25-18R38	35.15	weight applications.
	3.50-18R38	37.40	
	3.25-19M38	35.85	
41	3.23-19NO	33.03	
L27	3.25H19	49.90	Front: tube type.
Ribbed			sculptured rib for wet
			weather performance.
M48	130/90V17	75 95	Rear: tube type,
11110	1007.504.17	70.00	high mileage, all-
			weather, superbike
			applications.
M45 PZ2	2 50010	62.25	Front or rear: tube type,
Racing	4.00H18		added adhesion of
Series	4.25/85V18		high-performancecom-
Series	3.50H19		
	3.50H19	62.25	pound.
M45	4.25/85V18	75 45	Front or rear: tube type.
PY4	1.20, 00 , 10	10.10	similar to PZ2 with rain
			channeling grooves.
M45	4.25/85V18	79 20	Front or rear: tube type,
TY4	1,20,00110	70.20	same as M45 PY4
1997			except deeper tread
			for extended life.
S41	3.25H18	58.45	Front or rear: tube type.
PZ2	3.231110	30.43	street approved racing
			tire used on 250cc and
			350cc GP machines.
M38	2.50S18	20.50	
PZ2	2.30310	29.50	Front or rear: tube type,
1.77			street approved 125cc



MANI	MANG		
Model	Size	Price	Remarks
N-501	2.75-16	\$18.80	Front: tube type,
Ribbed	2.75-17	21.68	high-mileage, straight
	2.75-18	22.32	line stability.
	3.00-18	24.68	
N-741	3.50-16	32.64	Front and rear: tube
	2.75-17	21.68	type, high-performance
	3.00-17	26.64	touring.
	3.25-17	32.84	
	3.50-17	34.96	
	3.00-18	27.24	
	3 25-18	33 92	

29.50 Front or rear: tube type, street approved 125cc GP racing tire.



To year the			
Model	Size	APPENDING SE	Remarks
N-741	3.50-18	36.84	
	4.00-18	48.72	
	4.25-18	50.92	
	4.50-18	55.24	
	3.25-19	35.48	
	3.50-19	38.32	
	4.00-19	50.40	
N-751	3.50-18		Front and rear: tube
	4.00-18	46.16	type, high mileage
	4.25-18	46.72	touring tire, available
	4.50-18	55.24	in 4 and 6-Ply ratings.
N-752	5.10-16		Front and rear: tube
Universal	5.10H17	56.16	type, high-performance
	3.50/85-18	35.74	tread patterned after
	4.00/85-18	46.40	K81, triangulated
	4.25/85-18	47.60	carcass available in
	4.50/85-18	55.20	4 and 6-Ply ratings.
	5.10-18	57.60	
	3.25-19	31.76	
	3.50-19	34.12	
N-753	3.25-19	35.48	Front: tube type, high-
Ribbed	3.50H19		mileage, 85-percent
	1120		aspect ratio.
N-761	3.25H18		Front: tube or tubeless,
	3.50H18		round profile, blocked
	3.25H19		shoulders for corner-
	3.50H19	44.16	ing stability.
N-762	5.10H16		Rear: tube or tubeless,
Universal	5.10H17A		designed for high-
	4.10H18		speed touring, large
	4.25/85H18	53.12	displacement applica-
	5.10/85H18	64.16	tions.
N-772	5.10H17	56.16	Rear: tube type,
	4.10H18	50.88	high-speed cornering.
	4.25/85H18	52.08	
	5.00H18	61.12	
	4.10H19	51.60	
N-773	3.25H19	38.68	Front: tube type,
	4.10H19		match for N-772,
			85-percent aspect



NITTO

Model Size NT-180 3.50S18 3.75S18

Price Remarks \$37.95 Rear: tube type, high-40.50 mileage touring tire,

ratio.

Model	Size	Price	Remarks
NT-180	4.00S18	46.90	80-percent aspect
	4.25\$18	45.50	ratio.
	4.60S18	47.60	
	4.10H19	36.95	
NT-181	4.50H17A	47.95	Rear: tube type, fits special Honda tapered bead rim.
NT-187	MT/90H16T	50.00	Rear: tube type, tapered
Freedom 130	MT/90H17T	53.75	bead, high-mileage.
NT-183	4.10H18	37.50	Rear: tube type, high-
Ontario	4.60H18		performance tire with
			solid center tread for
			directional stability,
			80-percent aspect
			ratio.
NT-170	3.60H19	36.40	Front: tube type, match
			for NT-183.
NT-79	3.00S18	33.20	Front: tube type,
	3.25S18	33.50	straight ribs for maxi-
	3.25\$19	35.25	mum corner tracking.
	3.50H19	37.35	
NT-184	3.00-18	27.80	Front or rear: tube
	3.25-18	29.80	type, high-mileage
			lightweight utility tire.
NT-88A	3.00-17	24.40	Rear: tube type, high-
	2.75-18		mileage, blocked shoul-
	3.50-18	36.50	ders for cornering
	4.00-18	42.50	traction.
	(ACC)		



PIRE	LLI
Model	Size

Model	Size	Price	Remarks
MT 15 R	2.75\$18	N.A.	Front and rear: tube
Mandrake 3.25S18		\$29.50	type reinforced car-
	3.50\$18	30.50	cass for high-mileage and maximum load capacity.
MT 15 S	80/90S18	31 50	Front and rear: same
	90/90518		as MT 15 R without
Manuak	100/90S18		carcass reinforcing.
	3.00S18	32.00	carcass reinforcing.
	3.25S18	36.50	
	3.50\$18	36.90	
	4.00S18	46.90	
MT 18	100/90H18		Front and rear: tube
Gordon	110/90H18	43.50	type, developed for
	120/90H18	47.50	endurance racing,
	3.50H18	43.50	high-speed corner-
	4.10H18	43.98	ing, standard equip-
	3.25H19	37.90	ment on Laverda and Ducati heavyweights.
MT 28	5.10V16	59.50	Rear: tube type, high-
Phantom	4.10V17	59.50	speed cornering,
	5.10V17	59.50	developed for maxi-
	100/90V18	49.50	mum lean adhesion.
	110/90V18	49.50	
	120/90V18	53.90	
	4 25/85V18	49 50	

N.A.

N.A. N.A.

3.50V18

4.10V18

4.00V18

Price Remarks

continued on page 97



HOW TO REPAIR TUBELESS TIRES

It's Actually Quite Easy. After All The Tire Is Only Flat On One Side

By Art Friedman

recently read in another motorcycle publication that punctures in tubeless tires can't be repaired. Well, we're here to tell you that with the right tools, patches and appropriate caution, a tubeless tire can be repaired in much the same manner as an inner tube in an old tube-style tire.

Photo 1

Before you remove the nail or other puncturing object, decide if you want to fix the tire on the spot or ride to a more convenient location or a dealer. If you have a slow leak and can pump the tire up occasionally, you can ride slowly to a location where the repair can be performed. Even an auto tire store may be able to patch the tire-although you'll probably have to take the tire off the wheel for them. Don't ride on a punctured tire longer than necessary though, since this may do major damage to the tire, and don't ride on a completely flat tire.

Photo 2

There's only one safe way to patch a tubeless tire. Don't use sealant since that may mask the injury or make it difficult to install a proper patch.

Don't use an exterior type insert plug installed from the outside with the tire mounted. These are purely temporary patches which do little more than replace the nail you pulled out. They should only be used while you ride slowly to a location where the tire can be repaired properly. The only proper patch for a tubeless tire looks like these. It is installed from the inside with the tire off the rim. The patches come with stems of various sizes. The stem size you choose depends upon the size of the puncture. The smallerstemmed patch shown here is for small punctures like nail holes. The larger one patches holes up to 1/4inch (6mm) in diameter.

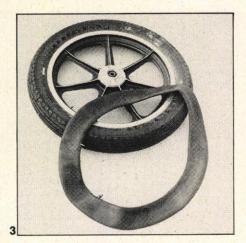
Photo 3

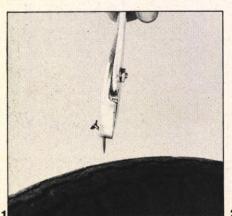
If the following procedure sounds too complicated or you don't have the equipment, there is one other safe way to repair a flat tubeless tire: install a tube. You'll lose most of the advantages of a tubeless tire (except perhaps blow-out resistance) and there will be a little slop around the valve stem. However, a tube is a safe repair, once you've gotten the puncturing item out.

Photo 4

Before you repair any tire, check the

entire tire to be sure there isn't any damage except the puncture. If the bead, chafer, sidewall or casing is damaged or there is a casing separation, the tire is history. Get a new one. If the tire is pretty worn, it may also be time to replace it, rather than repeat the operation in a short time anyway. If the hole is bigger than a ¼-inch (6mm), it can't be patched. If the chafer is damaged and won't seal, the solution is to install an inner tube. There shouldn't be more than one patch in any quarter of the tire, nor should a tire have









more than two patches. Finally, a tubeless tire won't hold air on a bent or cracked wheel—which is almost certainly unsafe anyway.

Photo 5

There are several tubeless tire patch kits for motorcycles. Honda, Kawasaki and Yamaha recommend and sell the Tech Uni-Seal method. This kit, made by Technical Rubber Co., is available through Honda dealers for \$47 as Honda part No. M9281-544-78750 (Honda Code No. 78750). It has two drawbacks for use by riders in addition to the expense. First, since it's intended for use by dealers it comes with 24 patches, about 12 times more than you'll ever use unless you're extremely unlucky. Second, the recommended repair procedure involves using an electric drill, which isn't possible in most roadside repairs. It also doesn't include tire irons or a pump.

Photo 6

A more sensible kit for roadside repairs is the Stop & Go motorcycle tubeless tire repair kit which includes everything you need for roadside repair. This includes tire irons, a buffer-stitcher tool, a reamer-insertor tool, a pump for filling the tire (they use the type you attach to your spark plug hole), cement and patches. If you are making up your own kit, you may also want to include some chalk or other marking device, a solvent for cleaning and

some talcum powder. The Stop & Go kit (also available for tube-type tires) is available from Signal Sentry Industries, Dept. MC, Box 544, Wheeling, IL 60090.

Photo 7

After dismounting the tire from the wheel, inspecting the tire and removing the puncturing object, mark the location of the puncture with your chalk. Then, using a patch as a guide, draw a circle on the inside of the tire where the patch will go. This will be the area that you prepare for patching. Use the probe (or reamer) to determine the size of the hole and its angle and select a patch with the appropriate stem size.

Photo 8

If you have a solvent like rubber cleaner or contact cleaner, use it to help clean the injured area inside the tire. Do not use gasoline or other solvents which leave an oily residue. Use as much cleaner as necessary. The Tech kit provides a can of rubber cleaner.

Photo 9

Use the buffing tool to help clean the area where the patch will be placed and roughen it. If there are ribs on the inside of the tire, buff them off flat in the area of the patch. Repeat the cleaning and buffing procedure until the puncture area is thoroughly clean. The patch won't stick to the inner liner if the liner isn't clean. Do not buff so much that

you wear through the tire's air-tight inner liner. For this reason, power buffers are not recommended. If you do wear through the inner liner, a tube might save you.

Photo 10

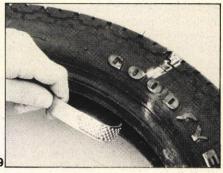
If you have a drill and the Tech Uni-Seal cutters, use the appropriate cutter in the drill to cut away all the injury. If you don't have those items, use the reamer or a coarse rat-tail file to make a small, round, clean hole not larger than your patch will repair. A smooth hole is necessary if the patch is to seal properly.

Photo 11

Apply cement to the area prepared in the previous steps. Do not use excess cement. Before continuing, be sure the cement is dry.

Photo 12

When the cement is dry to the touch (test an edge outside the patch area), dip the probe (or reamer) in the cement and run it through the hole while turning to apply cement







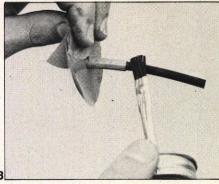














the tip of the stem (but not its bonding surface) with cement. To facilitate handling, the plastic seals may be loosely reattached to the patch on its bonding surface.

Photo 14

Push the inserting tool through the hole in the tire from the outside and attach the patch's stem to the tool as shown. Remove the plastic seals from the patch and pull the patch firmly against the inner liner of the tire. Use pliers to pull if necessary.

Photo 15

Using the stitching end of the stitching-buffing tool, stitch down firmly on the patch from the inside



to the hole. Repeat this two or three times to ensure proper coating of the hole.

Photo 13

Taking care not to touch the bonding areas of the patch and stem, remove the plastic seals over those areas. (Leave the plastic cover on the back of the patch in place.) Coat 14

A FEW FRIENDLY WORDS ABOUT TUBELESS TIRES

By Art Friedman

his is the year of tubeless tires on street motorcycles. Introduced in 1978 on the Honda CX500, motorcycle tubeless tires were used on just a few models until 1980. Now they are available in large quantities-and a full range of sizes-from Japanese tire manufacturers, so the Japanese motorcycle companies are using them on a wide range of street bike models. Tubeless tires-which can also be used with tubes on rims which won't work tubeless-are available from most U.S., European and Japanese tire manufacturers as replacement items.

Tubeless tires are constructed similarly to tube tires with two important differences. First, there is an inner lining of soft, air-tight rubber which covers the entire inside of the tire. This liner's soft rubber construction causes it to be forced tightly around any penetrating object, slowing or stopping the escape of air. The other difference in tubeless tires is the chafer, a layer of air-tight fabric which helps seal the bead area and protect against damage from contact with the rim or the prying of tire irons. Nonetheless, it's important to be extremely careful to avoid cutting or

damaging the chafers.

Tubeless tires offer several advantages to the motorcyclist. First, and most important, the rate of deflation when punctured is far slower than with a tube-type tire. This means that the rider isn't faced with a blow-out situation and the accompanying sudden handling problem when he picks up a nail or something. There's usually time to become aware of the problem and slow down comfortably. In fact, after some punctures, tubeless tires will hold acceptable air pressure for extended periods. It may be possible to ride for several miles before the tire loses too much air to continue. Tube-type tires often blow out instantly, sometimes with a pop, because the thin rubber of the inner tube usually tears when penetrated. The tear occurs when air pressure within the tube pushes out around the intruding object and rushes forth. Some types of tubes, such as those made with more natural rubber, resist blowouts better than others, but tubeless tires with their thick, almost tear-proof carcass are unsurpassed in this important safety feature.

Tubeless tires are also easier to install because there's no tube to work into place (while taking all the skin off your knuckles) and you

can't pinch a tube. Unsprung weight is reduced because there's no inner tube or rim strap. Because weight is reduced and friction between tire and tube is eliminated, tubeless tires also run cooler—and that means longer tire life.

To use tubeless tires, you need a rim designed for use with tubeless tires. Honda's ComStar wheels and many cast "mag" wheels will work with tubeless tires. Wire-spoke wheels won't hold air and some cast wheels are too porous to retain air. If a wheel is marked "suitable for tubeless tires" or if it came with a tubeless tire as original equipment, it will work with any tubeless tire of the right size. Besides retaining air, the rim must also have a hole (just one!) large enough to accommodate a tubeless tire valve stem, which requires a bigger hole than a tube's valve stem. A tire which can be run tubeless will always be marked "tubeless."

Tubeless tires should be stored the same way tube tires are. Keep them in a cool place away from heat, sunlight or ozone (given off by electric motors). Wipe off any gasoline or oil spilled on the tire. When stored on a bike for prolonged periods, both ends of the bike should be off the ground to avoid deforming the tire slightly. M

of the tire. Work from the inside outwards to remove any bubbles. When you're done stitching, peel off the clear plastic cover from the back of the patch. Clean any debris from the inside of the tire before mounting.

Photo 16

Install the repaired tire on the wheel and inflate it to the recommended pressure. Using some talcum powder as a lubricant on the rim, bead and tire irons may make it easier to slide the tire on without pinching or straining. Check to be sure that the tire has seated properly. Cut off the protruding stem 1/6-inch (2 to 3mm) above the surface of the tire. Do not

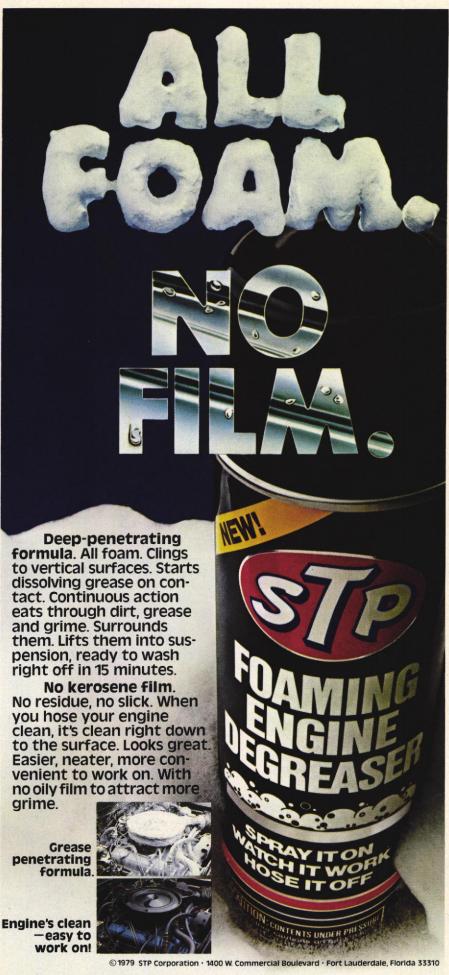




pull on the stem while cutting. Check for leaks.

Photo 17

If you did it right, you should have a safe, permanent tire repair. However, Honda warns against riding over 80 mph on any repaired tire. Dunlop's recommendation is to drop V-rated (sustained speeds of up to 150 mph) and H-rated (sustained speeds of up to 130 mph) tires one speed rating when they have been patched. Therefore, a 4.25V18 becomes a 4.25H18, and a 4.00H18 becomes a 4.00S18. S-rating designates sustained speeds up to 112 mph. In any event, be extra cautious for the first few dozen miles to ensure that the patch is holding properly and that other problems or complications haven't arisen.



Why did John Paige pick the new KZ550 with long-stroke front suspension? John claims when you're a little smaller, you have to be ready to handle anything.

After all, being totally in control of a bike that's as slim and quick as the new KZ550 can make you feel just fine, and if a backpacking beauty stops for some country conversation, maybe it's John's charm or maybe it's the lure of the Kawasaki.

Of course when John bought the all new

KZ550, he knew what he was getting into, so to speak. That the narrow configuration of Kawasaki's dependable four-stroke Z engine would give him plenty of clearance for fast cornering. That he'd get big-bike power through all six gears. That the air-adjustable, leading axle front fork and the adjustable



rear suspension would iron out the bumps in the road. He knew that the KZ550 would have an electric starter and an anti-hot wire device.

Once he took the KZ550 out on the road, he revelled in the handling and the performance. 13-second quarter miles really get your heart started.

But there was a surprise. What he didn't expect was the price. That really blew the doors off the competition. A bike that performs this well at this price is hard to beat. All his friends agreed with that. Once they caught up with him.

When you check out the KZ550 at your Kawasaki dealer, cast your eye over the stylish KZ550 LTD. There's all the same excitement plus a few trick extras, like transistorized breakerless ignition, a dual-

density foam rubber stepped seat and pullback handlebars. Choose—then get out on the road. That's where Kawasaki's new KZ550 belongs.

Kawasaki





Because Dave believes in full power when making a pass.

Dave was impressed with Kawasaki's ability to meet the EPA standards without loss of power. In fact, he appreciated the improved acceleration, the stable idling and the short warm-ups that the unique Clean Air System gave him.

But the real truth is, Dave Lewis bought the KZ1000 LTD because he had no choice. The mean, low-down, both feet on the ground stepped seat; the low, fat rear tire; the teardrop fuel tank; the pullback handlebars; he couldn't resist. Of course, with his friends, Dave was quick



to point out how reliable the 1015cc engine was; that it was easy to maintain with its transistorized breakerless ignition. He raved about the way it handled and the excellence of the three drilled disc brakes. He would mention that his was the engine that holds most major drag records and the world land speed record.

Then a lady would pass by and smile. As he smiled back, Dave knew why he bought

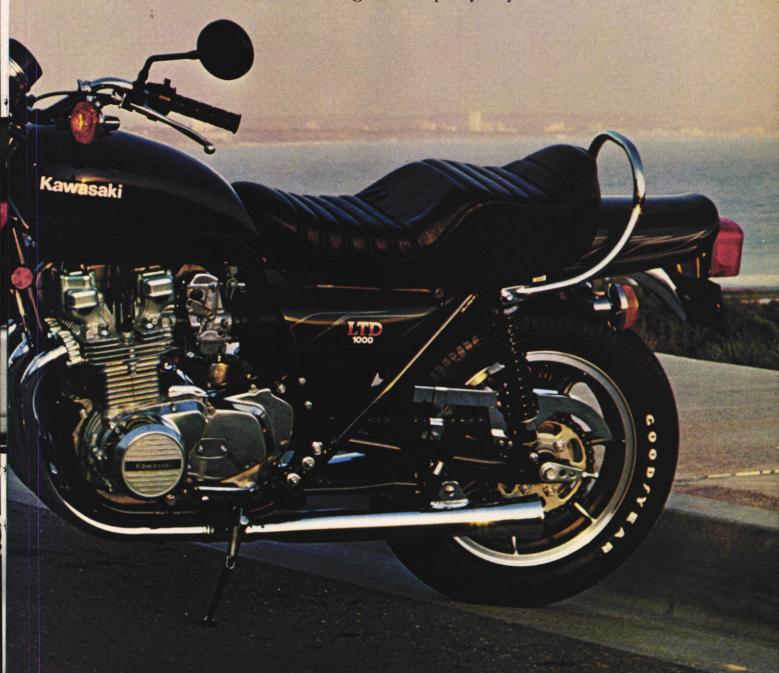
the KZ1000 LTD.

Come and check out the KZ1000 LTD at your local Kawasaki dealership and while you're there make a pass at the other LTDs. 'Cause they've got the power to keep you out there looking good.



Kawasaki

Don't let the good times pass you by.



Why did Eddie and Debbie Moon ride from Seattle to New Orleans on the shaft drive KZ1300?

Eddie claims it helped smooth out their relationship.

And Debbie agrees. When you find a bike as smooth and dependable as Kawasaki's KZ1300, it makes being the passenger a pleasure instead of an endurance test. And that means you end the trip feeling as good about each other as when you started.

When Eddie heard that Kawasaki had a shaft drive in some of their superbikes, he knew it was time to start investigating. He first looked at the new four-cylinder KZ1000 Shaft, and knew he was on to something. But when he noticed the new KZ1300 Touring, with its mighty six-cylinder 1286cc, DOHC engine, he knew he could cruise with luggage and Debbie—and still pass an eighteen wheeler going up-hill.

He found that the shaft drive delivered an incredibly smooth, quiet ride. He felt virtually no vibration, and the silent cam chain cut down





he 23rd International Tokyo Motor Show was a subdued affair, opening at a time when Japan's motor vehicle industry was facing, as Masao Tokuyama, Managing Director of Japan's Motor Industrial Federation pointed out, "a wide range of safety, exhaust gas, noise and other problems. The most critical problem: how to save our limited energy resources."

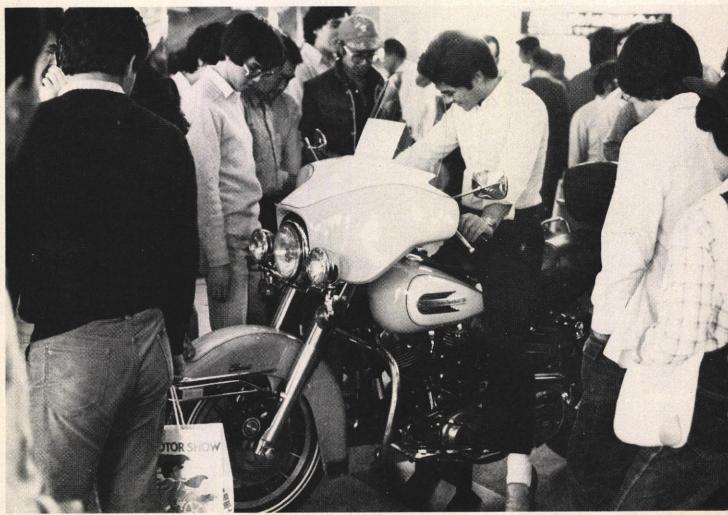
The displays of the four domestic motorcycle manufacturers reflected this concern with conservation by emphasizing lightweight utility bikes. Yamaha, Suzuki and Honda all had on prominent display their 50cc step throughs. The Honda example, the Super Cub, at age 22, was surely the oldest design present. With a claimed 213 miles per gallon possible from the little beast, and a home-country selling price of about \$450, it's not likely Honda will find reason to retire its greatest success story soon.

In addition to the old stand-by 50s, all the makers except Kawasaki had a complete range of ultra-light run-to-the-corner-store two-wheelers taking up a major portion of the display area. There were no mopeds, since Japanese law does not grant favors for vestigial pedals. Kawasaki's lightest bike was the KC125, a two-stroke twin straight out of the early Sixties that could only claim a lousy 118 mpg.

The background for this overt emphasis on fuel efficient motorcycles is a Japan that has seen a nearly 40 percent rise in gasoline prices over last year: a liter last fall cost 155 yen-anywhere from \$2.50 to \$3.50 a gallon, depending on which way the dollar is flip-flopping on world currency markets. You think we've got it bad here, energy-wise? We're still living in an energy paradise. Look at Japan and you'll see how it will be in another two or three years, when things really begin to get nasty. We complain about having to pay \$24 a barrel for Saudi oil, but the Japanese have been paying \$40 a barrel for the stuff on the spot market to satisfy the insatiable need of their industry

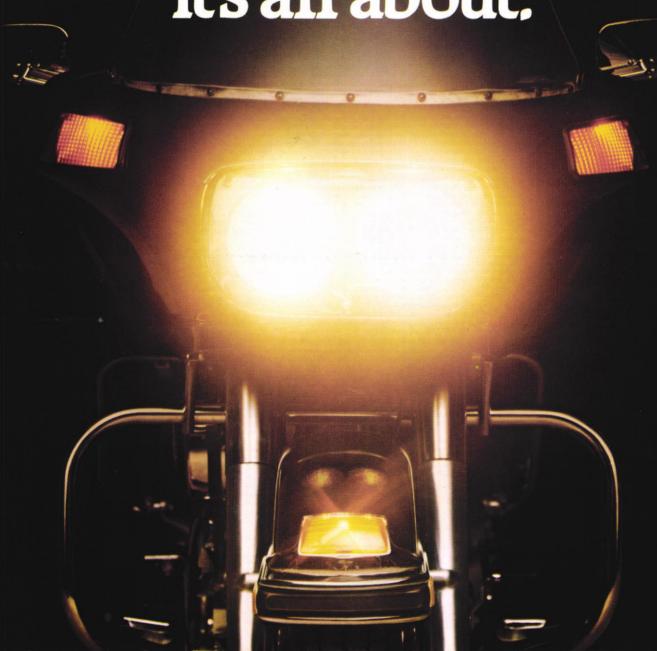
SHOW

Factories Pushed Economy, But The Fans Were Interested In Power/By C.D. Bohon



Harley-Davidson had a display at the Tokyo Show, and the humongous 1300cc Milwaukee beasts drew crowds bigger than any other.

Smoothness and handling. This is what it's all about.



Announcing the Harley

The first touring bike built to handle like a sport bike.

This is a touring machine like nothing before it. We've taken the practical simplicity of the Harley-Davidson V-Twin, and mated it with the best of high technology—for luxurious smoothness and effortless handling.

First, through a revolutionary new Tri-Mount chassis, we isolate the rider from engine and drive train feedback. The ride is incomparably smooth. Look in the mirror: there's no ghosting.

Second, we engineered a truly balanced front end by improving on standard front fork geometry. Steering balance is nothing short of amazing: take a 35 degree lean angle on a winding road and feel the difference. This tourer handles like a sport bike!

The chain is completely enclosed and runs in an oil bath. So now, the most power efficient drive system in motorcycling is virtually maintenance free and long lasting

nance free and long lasting.

The list goes on and on. The Tour Glide™ is the first 5-speed Harley V-Twin. There's a new high-visibility, integrated instrument pod. And the only standard dual headlamps in the business.

But at Harley-Davidson, we're still out to build superb, yet superbly sensible motorcycles. That's why we chose the enclosed chain over the complex, expensive shaft. And why the V-Twin is such a critical part of the Tour Glide. Even at 80 cubic inches, it's simple, durable, fuel efficient* and easy to maintain.

The Tour Glide. Superbly balanced, yet elegantly simple. And with one more thing. The sure feeling that riding a Harley-Davidson puts you a cut above anything else in the world.

*Your mileage may vary, depending on how fast you drive, weather and road conditions, and trip length.



Harley-Davidson. More than a machine.



-Davidson Tour Glide.

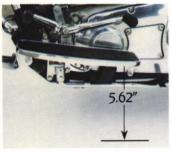


Smooth...from any angle.

Shifting

The first 5-speed Harley V-Twin! With close gear ratios reduced, it clicks in smoothly... effortlessly.

Cornering



Clearance is no problem! Lean through an S-curve at a 35 degree lean angle without fear of scraping.

Maintaining



Enclosed chain eliminates the normal lubrication and clean-up hassles of chain maintenance. And doubles standard chain life!

We support the Motorcycle Safety Foundation and the A.M.A. Always ride with lights and helmet. Specifications subject to change without notice.

Handling

The new balanced front end achieves incredible steering balance. Forks are positioned behind the pivot point of the steering head, and the rake angle is now steeper than the fork angle. This gives you the correct amount of trail for stability and lowers the center of gravity. So how responsive is it?

Even in the showroom, you can turn 700 lbs. of static motorcycle with your little finger!

Viewing



New instrument pod with standard speedometer, tach, storage compartments and locks. And dozens of custom accessories From illuminated gauges and chrome coil cover to our radio caddy with AM-FM and cassette or CB.

Riding



The remarkable new Tri-Mount chassis uses three automotive-type elastomer mounts and two aircraft-type ball-joint stabilizers to isolate the rider from engine and drive train feedback. All you feel is "smooth." for the precious fuel. The next time you feel like grumbling about the jump in price of that Japanese bike you've been eyeing down at your local showroom, remember the oil that powered the plant machinery where it was built, the petroleum products that produced the rubber, plastic and naugahyde in it, all cost the Japanese twice as much as they do an American maker.

To conserve costly foreign fuel gas stations close on Sundays and holidays—none are open later than 7 p.m. on weekdays—central heating and air conditioning units, already temperature restricted, start and stop running a half hour later and earlier each day. No car days will soon be common. Street lights have been dimmed, as have most advertising signs and shop lights. Traffic is lighter than it has been in a decade.

Still the crowds came to the motor show, to search out dream machines they'll never see anywhere else, like the XS Eleven or KZ1300, not for sale in Japan, or for convenient comparison shopping for their next mount, and of course to see the latest in innovation from the factories.

In this latter category, and very likely the most significant motorcycle on display at the show, was Yamaha's alcohol-fueled bike, the Alcool 125. This machine doesn't run on gasohol, but rather pure alcohol. It was designed at the request of a Brazilian company and should go into production for export there soon. Since the Japanese government is committed to reducing that country's helpless dependence on foreign oil as soon as possible, and has already established ties with Brazil to develop fuelalcohol technology, it's likely in developing the Alcool that Yamaha figures to have a head start on the competition at home in the alcohol world of the near future, too.

Externally, the Alcool looks very much like a gasoline-powered bike and the single-cylinder two-stroke motor reportedly delivers power and fuel-consumption figures not far off those of a similar gasoline-fueled bike. But to actually develop a viable alcohol-powered motorcycle, Yamaha had to do some careful design work. Pure alcohol simply can't be dumped into an engine designed to run on gasoline. The engine must first un-

dergo complex modifications. Yamaha had to develop special corrosionresistant materials in the fuel tank, fuel lines and filters. The compression ratio had to be raised drastically, perhaps to as much as 12:1, the static ignition timing was altered, a spark plug with a colder thermal grade was adapted, and of course the carburetor, choke, porting, exhaust timing and other apparatus connected with fuel delivery and combustion were all redesigned.

The biggest problem with alcohol as a fuel is that unless the weather is really warm, it just doesn't want to start burning in the cylinder; that is, you can't start the motor. Yamaha has overcome this by installing an auxiliary gasoline tank as part of the oil tank. When the air temperature drops below 68 degrees F., a device Yamaha labels as a Bimetal Vacuum Switch Valve opens during start-up, then, once the fire is lit, automatically switches over to the main alcohol fuel tank, solving the problem.

Studies have shown that an alcohol-powered motor can experience up to a 23 percent power increase, but will consume 20 percent



Yamaha's RZ250 ought to be sold over here. It's got watercooling and 35 two-stroking horsepower at 8400 rpm. Lovely.



Honda's venerable Super Cub, 50ccs of unstoppability, marked its second decade since 1958 of appearing at the Tokyo Show.



Honda's NR500 GP racer may have been a flop on the European circuits last year, but it still has magic to conjure crowds.



The custom-look is popular in Japan, too. This KZ400 LTD Kawasaki drew some stares. It should be on sale here soon.

ALCOU.
SES

Yamaha's Alcool 125, a motorcycle that runs on 100-percent pure alcohol, may have been the most significant motorcycle at the show. A lot of special engineering went into making what looks like just an ordinary little two-stroke. Below-For the first time since we've been going to the Tokyo Show women and kids were much in evidence browsing for transport. Blame the cost of gasoline, now over three bucks a gallon in Japan. Bottom-Still, not even nattily attired models and neatlooking go-to-the-grocery store scoots could draw even the hint of a crowd to the utility displays.





THIS THOUSE STOW

more fuel than a conventional unit. Its exhaust emissions, however, will be 60 percent lower in NOX and 50 percent lower in CO. It will emit no hydrocarbons, of course, or lead, which is very good news for all of us who like to inhale and exhale.

It's very likely the Eighties will view the Alcool 125 as the first of a whole generation of alcohol-powered machines that will not only go a long way to solving the energy crisis, but also take care of our smog problem.

Probably a lot of folks at the Motor Show mused along those lines after seeing the display, but that didn't stop them from gravitating away from the giant utility bike displays to eyeball the performance hardware. You could have fired a cannon-or wheelied a KZ1300-down the aisles in front of the 50cc runabout spreads and not disturbed a soul. Pretty young things mouthed rote-learned sales pitches to the backs of heads of people interested in the latest in three-quarter liter stormers and not at all in saving gasoline. The powers that be may emphasize economy, but you and I know we buy motorcycles

to enjoy speed and power and freedom on the open road and all kinds of lyrical stuff like that. Motorcycles are our hobbies, our pleasure, our escape. Deep down we don't give a damn about fuel economy as long as we can afford the gas to fill the tank. Same in Japan. So the demure performance arenas of the various manufacturers were mobbed so you couldn't elbow your way to the front to eyeball the latest in valve-head technology for speed, or see close up and drool over the latest GP and Endurance racers.

That fact, along with the alcohol bike, was probably the most significant aspect of the whole show. In an era when it can be rationally argued that any motorcycle over 50cc is a luxury hobby device that wastes precious fuel, people still are interested in, still like and want to buy machines with 15 times that displacement, machines that burn more fuel than some cars, but machines that are superb sporting devices and a hell of a lot of fun. Despite fuel crises, the golden age of motorcycling is far from over.

Enjoy the taste of country fresh Salem.

Mendar Tred

Salem Salem

FILTER CIGARETTES CRUSH-PROOF BOX

Country fresh menthol.
Mild, smooth and refreshing.
Enjoy smoking again.

Also available in 100's.

KING: 16 mg. "tar", 1.1 mg. nicotine, BOX: 18 mg. "tar", 1.2 mg. nicotine, 100's: 19 mg. "tar", 1.3 mg. nicotine, av. per cigarette, FTC Report MAY '78.

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

THE 4-STROKE XR ENDUL SUPERBIKES FOR T

If there's one thing every good enduro rider loves, it's the chance to take unfair advantage of the other guy.

To have a machine so hot that all those poor bozos out there are sure you've found some kind of shortcut.

Well, now you can have that hyper-trick secret weapon.

A 4-stroke Honda XR enduro machine. An XR500, XR250, or XR200.

Of course it's unfair. But even better than that, it's perfectly legal, too.

And just look what you've got. A powerhouse 4-stroke single with all kinds of low-end torque and mid-range punch. And more topend muscle than you're likely to ever need in your typical enduro.

On the XR500 and XR250, you've got four valves to the cylinder and Pentroof™combustion chambers. And engine counter-balancers that keep the vibration level of these torque-pumping singles way down low. So you can ride a lot longer before you start getting tired.





And on all three of the big XRs, the engine is a stressed component of the diamond-configuration frame. Which helps keep the weight down. That's one reason why they handle like they do. Of course, the suspension doesn't hurt, either. Up front, you've got leading-axle forks with 8.5 inches of travel or more. In back, lay-down, inverted, gas-charged shocks that give you 7.5 or more inches of rear wheel travel.

On the XR500 and XR250, there's a 23-inch front wheel that floats over bumps, tracks straighter, and stops shorter. And on all three big XRs, you've got Honda's exclusive self-



ALWAYS WEAR A HELMET AND EYE PROTECTION. Designed for off-road operator use only. State laws effecting off-road motorcycles vary. XRs may not meet noise regulations in some states. Installation of high-performance parts may increase XRs decibal rating above legal levels in some states. Check local laws before installation. Specifications subject to change without notice. © 1980 American Honda Motor Co., Inc. For a free brochure, see your Honda dealer or write: American Honda Motor Co., Inc., Dept. 46, Box 50, Gardena, California 90247.

PO MACHINES. HE DIRT.

cleaning, claw-action tires that actually grab into the dirt and hang on for lots more traction.

You've got all the neat little touches, too. Like a folding-tip gearshift lever and brake pedal. A wide-sweep speedometer. A tripmeter with big numbérs you can reset with your gloves on. A tool bag that's easy to get to. A trick combination wrench. A 25-watt headlight. And a USDA-approved spark arrestor.

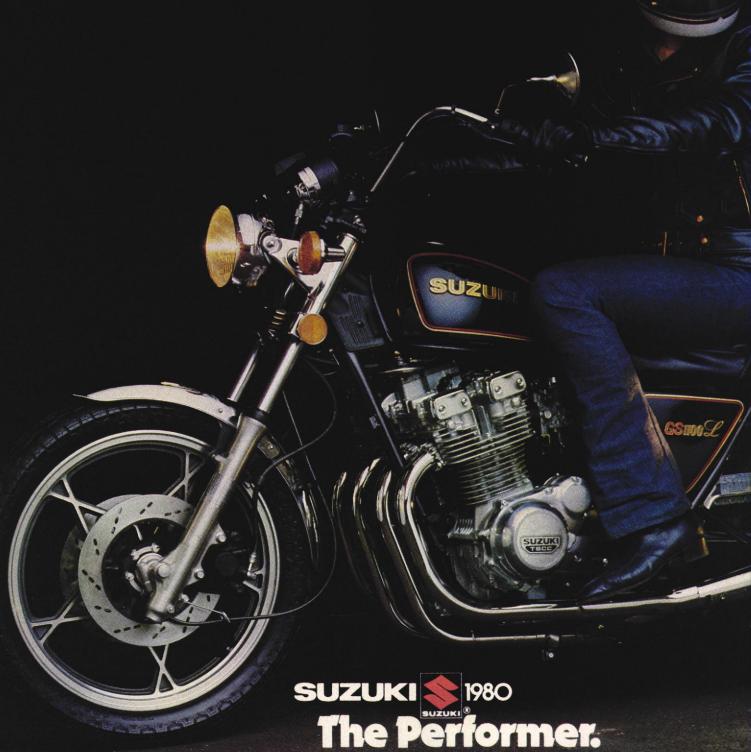
So put it all together. That tremendous fourstroke powerband. The light weight. The handling. All those neat little enduro touches.

And look what you've got at long last. Your very own superbike for the dirt.

And that one secret weapon that's going to leave those other poor guys lost in the woods.



Luxury



Ride safely. Always wear a helmet, eye protection and appropriate riding apparel. Member Motorcycle Safety Foundation





This bike, friends. is enough to send other cruisers down the boulevard of broken dreams.

is that good.

Why? To begin with, it's powered by a unique 16-valve head 4-stroke with a patented Twin Swirl Combustion Chamber design.

Is that good? It's great. Because fuel is burned more efficiently. Thus, more power is produced. More than any conventional 4-stroke.

This new engine is only part of the story. Other parts include triple disc brakes. Slotted, no less.

And leading axle front air forks.

And 5-way adjustable rear shocks with 4-way rebound dampers.

And the story continues: Honest, the new GS-1100L Fully-transistorized pointless ignition. Electric fuel gauge. Halogen headlight. Teardrop tank. Pull-back handlebars. Plush step saddle. Chopped pipes. And a fat 16" rear tire. End of story? Nope.

Get this: Like all 1980 GS models, this bike is backed by a 12-month unlimited mileage warranty.*

Now go cruise in luxury.





f you ride in the desert, you probably don't ride a Kawasaki. And Kawasakis aren't exactly a dominant force in woodsy enduro competition either. The explanation for this shortage of chartreuse off-roaders is simple enough. Until recently, Kawasaki hasn't built bikes that were suitable for non-motocross dirt use. Just last year, Team Green finally entered the market with the KLX250 and KDX400-a fantastically fun fourstroke and a formidable but not-toofriendly two-stroke enduro bike. These two have character quirks that keep them from appealing to all types of off-road riders-from playriders to serious enduro types.

Though Kawasaki narrowly missed the mass-appeal boat in the past, they've hit pay-dirt with their latest Play-Duro-the KDX175. No matter where you might ride, you'll have a hard time not liking the KDX. It's got so many good points that it's unavoidably likable. First, since it is the ever-popular 175cc displacement, it's light and small, but still has enough power to keep you amused. Secondly, its chassis is a match for anything in the class, handling and suspension-wise. And finally, the 175 is awfully cheap. Its \$1199 suggested retail price undercuts the Suzuki and Yamaha by nearly \$200. The KDX will probably be the best buy of 1980.

Naturally, a low price isn't worth much unless the bike works well. The Kawasaki easily exceeds this requirement. The 175 is the first model in

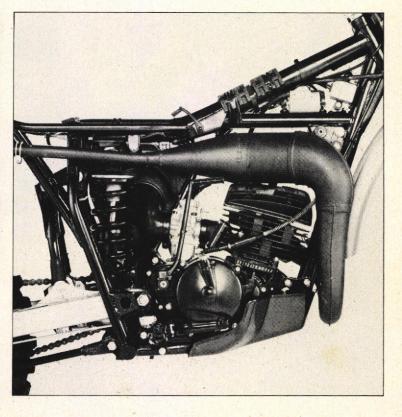
the wave of Uni-Trak Kawasaki offroaders, so it's the first chance to scope out the new single-shock rear suspension system on a production bike. Among the Uni-Trak's advantages are a lower center of gravity than conventional dual shock set-ups or Yamaha's Monoshock. Like the Mono, problems with unequal dual shock performance are eliminated with the Uni-Trak. And the KDX's shock is placed where it receives more cooling air than the Yamaha unit, so theoretically, it should run a little cooler. If you pay attention to recent Kawasaki ads, you're undoubtedly aware of the Uni-Trak's claimed ability to create mysterious force fields which are able to sidestep the laws of physics and move the machine's center of gravity lower than the competition's. Then of course there's the all important "vertical load" provided by the Uni-Trak lay-out. Most of this advertising hype is little more than double-talk, but the Uni-Trak does have one very real advantage over every other type of rear suspension system currently available. It affords springing and damping that have a geometrically rising rate. The leverage ratio between the wheel and the shock changes as the suspension compresses. The wheel's leverage over the shock decreases as the suspension compresses, making both springing and damping progressively stiffer at the wheel. So even with its straight-rate spring, the Kawasaki's

back end works as well as those of other bikes using all manner of dual and triple rate springs and trick progressively damped shocks. The Uni-Trak concept really works.

Mechanically the Uni-Trak is only slightly more complicated than other types of rear suspension. The large gas shock mounts vertically in front of the rear wheel. Its bottom end mounts on the bottom frame cross tube, just behind the engine. The KYB gas shock fits through a channel in the KDX's steel swingarm. At its upper end the shock bolts to the forward end of a bellcrank which pivots at its center on a frame mount just under the seat. The other end of the bellcrank connects to a pair of vertical arms that go down and mount to the top of the swingarm a couple of inches behind its pivot. When the suspension is compressed, these arms transfer the movement of the swingarm up to the bellcrank. which, with a rocking motion, delivers that movement to the shock. The 175's shock has just 90mm of stroke, but with the 2.78:1 average leverage ratio the wheel travel is 250mm or 9.84 inches. The preload for the hefty single-rate spring can be adjusted by loosening a large locknut on the bottom of the shock, then screwing the adjuster nut up or down to achieve the desired setting. We were happiest with the preload set as delivered when our 160-pound riders were on board. Cost considerations kept Kawasaki from equipping the

KAWASAKI KDX175

This may be the best buy in motorcycling. For \$1199 you get a bike capable of providing unlimited fun—or even winning an enduro.





Fuzzy foam air cleaner could be better. The element is flimsy and its close fitting cover reduces surface area.



The 175's lighting is the same system found on the KDX400. It's a little fragile, though—vibration takes its toll.



Uni-Trak connecting link uses rubber covered heim joints which must be carefully serviced at regular intervals.

shock with externally adjustable damping or a remote reservoir like the KX motocrossers will have. Kawasaki will offer softer and stiffer springs for the 175, as well as a lighter aluminum swingarm to replace the stock steel one. There will also be air caps available for the leading-axle front fork, and there's a possibility that a motocross-style shock—equipped with a reservoir and adjustable damping—may be offered.

Only certified loonies are likely to need the trick shock, though, because the stocker works beautifully as is. The Uni-Trak is very responsive to small ripples and undulations. Traction is consistent since the wheel follows the ground accurately. The Uni is quick to respond to square-edged lips and bumps too. It rarely kicks the back of the bike up or batters the rider. Often, we'd approach an unavoidable rock or small log at speed, waiting for the colossal thump of impact, only to have the KDX roll over it with no trouble. Really big impacts will bottom the Kawasaki's back end, but rarely with enough force to cause any control problems. The action through deep whoop-de-doos is first-rate too. Even with the bike's quick steering geometry, the machine stays straight. The Uni-Trak system doesn't make the KDX feel much different overall than a normally suspended bike. There are no handling quirks brought on by the new design. If you didn't know better, you'd probably figure that the 175 was normally suspended-but with a pair of very good shocks.

The Kawasaki's front end doesn't pack any innovations, but works well just the same. The fork is virtually the same unit that came on last year's



RPM HP TORQUE 2000. 1.67......4.38 2500 .2.28......4.80 3000 .3.82......6.68 3500 4.316.47 40 40 4000 .7.83 4500 .6.88.8.03 5000 7.65......8.03 CORRECTED REAR WHEEL HORSEPOWER 5500 .8.53 6000 6500. .11.75......9.50 7000.14.18......10.64 TORQUE IN POUNDS FOOT 7500 .15.79......11.06 30 30 800017.01......11.17 8500.. ..18.41......11.37 9000......18.60......10.85 9500......19.26......10.65 10000......12.91......6.78 HP (19.26 max.) 20 20 10 10 TORQUE (11.37 max.) RPMx100 20 40 60 80 100

PRICE 1980 KAWASAKI KDX175 \$1199 1980 YAMAHA IT175G \$1399 1980 SUZUKI PE175T \$1379 1000 1100 1200 1300 1400 HORSEPOWER 1980 KAWASAKI KDX175 19.26 at 9500 rpm 1978 SUZUKI PE175 17.82 at 9000 rpm 1979 YAMAHA IT175F 20.60 at 8500 rpm 18 19 20 21 17 WET WEIGHT 1980 KAWASAKI KDX175 240 lbs 1979 YAMAHA IT175F 237 lbs 1978 SUZUKI PE175 238 lbs 230 235 240 250 245 SUSPENSION TRAVEL 1980 KAWASAKI KDX175 FRONT 9.8 in. REAR 9.8 in. 1980 SUZUKI PE175T FRONT 9.8 in. REAR 9.7 in. 1980 YAMAHA IT175G FRONT 9.8 in. REAR 9.8 in. 8 9 10 11 12

KAWASAKI KDX175



Suggested retail price	\$1199
	90 days, unlimited miles
Number of U.S. dealers	1170
	Included

ENGINE

Type	Two-stroke, reed-valve single
	173cc
Bore x stroke	66 x 50.6mm
Compression	7.6:1
	1, 34 Mikuni slide needle
Lubrication	Premix
Air filter	Oiled foam
Battery	None

DRIVETRAIN

Primary transmission	Spur gear, 3.0:1
Clutch	11 plates, wet
Final drive% x 1/4 (No. 520) D.I.D. c	hain, 52/12, 4:33:1

CHASSIS

Fork	36mm Kayaba, 9.84 in. travel
	Kayaba Uni-Trak, 9.84 in. wheel travel
Front tire	3.00-21 Bridgestone M17
Rear tire	4.00-18 Bridgestone M20
Rake/trail	28° /4.72 in. (120mm)
Wheelbase	58 in. (1473mm)
Seat height	
Ground clearan	ce12.5 in. (318mm)
Fuel capacity	2.8 gal. (10.6 liters)
Wet weight	240 lbs. (109kg)
Colors	Green
Instruments (Odometer, tripmeter resettable by tenths

PERFORMANCE

Power to weight ratio	12.4 lbs./hp
Mileage & approx. range28	3.57 mpg average, 80 miles
RPM at 60 mph in top gear	7560
Speed in gears at (redline)	
	2nd 33 mph; 3rd 43 mph;
	4th 54 mph; 5th 65 mph;
	6th 75 mph

KX125, only in this enduro application the air caps are gone. The travel remains the same at 9.8 inches, though the springing and damping are reworked to function better on the trail. It feels much like the Universal Japanese Fork—it's smooth and supple on all types of bumps and bottoms only occasionally. In most instances, the KDX's back end will bottom before the progressively sprung fork will. Ten-weight oil comes stock, so there's plenty of

room for experimentation should you feel the urge.

The fork is held at a steep 28-degree angle, providing nimble steering. The trail is shortish also, just 4.7 inches. Together these numbers make the 175 easy to pilot on tight trails or through nasty rock gardens. The steering always feels light and precise, even at trials bike speeds. As long as there is a bit of traction the KDX is easy to keep on course. Between the smooth suspension and

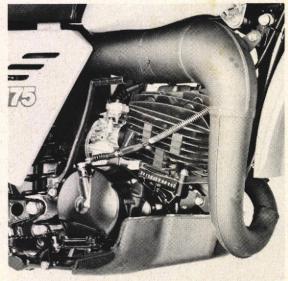
spiffo-steering, you can normally avoid most big obstacles on the trail, and even when you can't, going over them poses little problem. Surprisingly the quick steering doesn't seem to present any real problems at speed on rough ground. As long as you keep your weight to the rear the bike stays straight and stable-even in sand. It gets a little squiggly now and then, but never threatens to pitch you off. With a small-bore bike like the KDX there simply isn't enough power available for full-fledged powerslides in the desert sand. But the predictable bike does its own version-which is just as much fun. Dodging puckerbushes in fourth gear, the Kawasaki is happy to set up controllable two-wheel drifts. It's a lot of fun. The chassis really works extremely well. It's as happy going Full Goose Bozo across the California desert as it is picking its way through the Ohio back woods in first gear. We know because we did both.

The 173cc engine adds to the KDX's versatility. With 19.26 peak horsepower, it isn't the strongest 175, but it has a smooth predictable powerband. The 1979 Yamaha IT175 and Can-Am qualifier both make a couple of ponies more. The Kawasaki starts pulling right from idle with decent but unspectacular power. With its wide-ratio six-speed gearbox, the 175 needs to be wound-up pretty tight to make the jump from second to third gear on uphills. The motor makes good power, but the gear spacing seems a tad wide. On particularly steep slopes the same thing happens between first and second occasionally. In these situations we learned to keep the throttle wide open with the engine shrieking while speed-shifting to second or third. Our particular test bike was also reluctant to upshift crisply to fifth gear at times. To prevent finding a big neutral, the clutch must be pulled in all the way and the shift lever booted firmly to select fifth. Otherwise the gearbox operation was satisfactory.

Our test bike spent a good deal of its time in the company of bigger, faster bikes, so it saw a lot of hard, full-throttle use. Nothing of any real consequence broke or fell off, with the exception of the plastic chain guide (and our Associate Editor). Part of the reason for the KDX's basic durability is the fact that most of its pieces have already been wellproven in previous Kawasakis. The engine, for example, is basically a bored-out 1979 KX125 mill. The stroke is the same, as are the cases and some of the transmission pieces. The gear ratios are different though. The 175 even has the motocrosser's Electro-Fusion cylinder. It can't be



Take a '79 KX125 motocross engine, bore it out, detune it a little, juggle the gear ratios, and the result is a pretty decent enduro motor. Our test bike was overly loud. Exhaust chuffed its way past the cylinder-to-headpipe gasket and created a lot of noise. Stronger springs might reduce the racket.



rebored, but it is more durable than chrome or steel bores and provides excellent heat transfer properties. Unlike Honda's chrome bore, the Kawasaki process lets you port the cylinder without risking flaking chrome and a piston seizure.

The wheels, too, are off-the-shelf items. The front one is fitted with a decent drum brake in a conical hub; the rear assembly has a full-floating rod-operated unit similar to the KX125's. The back brake is extremely

sensitive, so a very delicate touch is required. We could never get used to it, and were constantly killing the engine with the brake accidentally. The Bridgestone tires are standard Japanese fare, but work well. A set of Metzelers or Hi-Points would be better, but the stockers are worth keeping until they are burnt out.

Kawasaki was trying for mass appeal with the KDX175. They wanted to build a first-rate enduro bike that would appeal to playriders too. To fill

both qualifications the machine needed to be competent yet inexpensive. The Kawasaki designers succeeded spectacularly. They struck just the right compromises in the development of the KDX. Costs were cut in areas that wouldn't compromise performance, while the long green was spent on important areas where it would do the most good. The result is the best 175 enduro bike we've tested, at a price too low to resist.

lt's amazing how quickly Kawasaki has gotten their new Uni-Trak dirt bikes out into the showrooms and onto the trails. Just last season the new single-shock rear suspension was a rumor, yet here it is. It seems that Kawasaki crammed their development work into a very short period of time. Rushing the development of an entirely new motorcycle is usually a sure way to come up with a real loserlots of not-quite-right parts and often major shortcomings. The KDX175 has none of these problems and has so few flaws that you might think that the bike has been around for years, being carefully refined until it was close to perfect. And unlike the guys at Yamaha, who had a rough time getting their Monoshock rear suspension sorted out in the production bikes for several years, Kawasaki has seemingly done it on their first try with the Uni-Trak system. It helps to make the KDX one of the best smallbore enduro bikes you can buy.-Jeff Karr

I believe that clean and simple engineering makes the best motorcycles. Gimmicks such as digital read-out gear indicators and quick-removable countershaft sprockets dilute the purity which generally leads to superior function. At first I thought Kawasaki's Uni-Trak was a marketing gimmick, and sarcastically I conjured up a Kawasaki sales meeting in my mind: "Those Yamaha guys have sold thousands of units because of that Monoshock. We need something like that. Something to write special ads about. We can get Brad Lackey and Jack Penton to say it's great. We'll dazzle 'em with terms like 'center of gravity' and 'rising rate action.' We'll be different. People want that. This new rear end has to have a catchy name. Let's see . . . Big Springer, Devil Damper, The Leveler, Speed Spring, Uni-Track . . . ah, that's it! Only we'll drop the C to be more trick-Uni-Trak. We'll sell thousands! By the way, do you think the engineers can make it work?"

That was my opinion of Uni-Trak going in. After all, brands such as Honda, Husky and Suzuki don't need trickery to provide superb rear end control. I also knew that Brad Lackey cussed his Uni-Trak more than once last season during

its teething period in Europe.

But then I rode the KDX175. It wasn't head and shoulders above everything else, but you'd be hard pressed to find a better rear end. It really works and it's no gimmick at all. It's one of those breakthroughs that makes dirt riding a little bit better without adding complication, maintenance or reliability problems. Kawasaki is definitely on to something. -Dale Boller

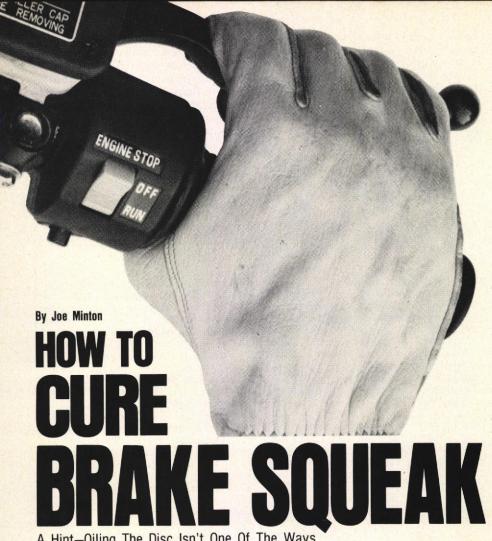
A 375-mile trip down Baja's vast wilderness wouldn't exactly be termed the ideal testing ground for Kawasaki's new KDX175. After all, it was designed for precision ISDT work, not strafing cactus bushes at 65 mph. But there I was. packed in amongst a horde of fast-moving Honda thumpers and long, lanky Husky 390s, running flat out across Baja's torturous unearthly domain, trying to keep up with fast company.

Now I'll admit that bombing down rutted and washboard roads and bouncing off hidden rocks and stumps gave me little indication of the KDX's true versatility, but it was definitely an accurate test of the machine's suspension and overall durability; there isn't another stretch of land on earth which can punish a motor and tear apart a bike's limbs like Baja. The KDX175 really did amaze me; it's a well thought-out package that's capable

of absorbing a great deal of punishment. Its suspension is impressive in itself. The Uni-Trak might appear to be just another marketing gimmick or just an alternative to established designs, but there is no question that it works, and works well. It may require a bit more maintenance, but this system provides a plush and compliant ride that other manufacturers will find hard to surpass. In no way has Kawasaki skimped on the amount-or quality-of the KDX's suspension. And the engine, which has the potency of Can-Am's little pocket-rocket, will be something to be reckoned with in the 175 class. Its low-speed characteristics are quite agreeable and there will be few 175s that will be able to match its blistering top-end charge. Considering the pace at which our group stormed through Baja, by day three I expected the KDX to start crumbling under the stress. But the damages were surprisingly small. The plastic chain guide was ripped off by a rock in the first 50 miles, however the chain never derailed thereafter. The constant pounding shook the headlights' socket from the housing pulverizing the bulb and the plastic odometer housing separated from its moorings, which seems to be a common occurrence with all KDXs. Other than those few weak spots, the KDX escaped Baja's clutches unscathed-a real credit to its endurance. -Rich Cox



The Pemex stations in Baja won't win any architectural awards, but gas here at Valle Trinidad was priced at only 50 cents a gallon. It's low octane too, but the KDX drank it without a hiccup. Riders in the group included Marty Tripes, Roger DeCoster, Malcolm Smith, Jimmy Weinert and a dozen other speedsters. The KDX was the only 175.



A Hint-Oiling The Disc Isn't One Of The Ways

hen Honda introduced their four-cylinder 750cc superbike, they served notice that the motorcycle enthusiast need no longer accept vibration, oil leaks, unreliable lighting or-poor brakes. Honda's powerful disc did not require a warm-up to reach full efficiency, was slow to fade and was relatively light. The instant success of the disc brake and its clear superiority over the time-honored drum brake led other manufacturers to quickly follow in the footsteps of this most innovative of companies. The disc brake does, however, have its own weaknesses: It is more complex than drum brakes; it is more sensitive to dirt; and braking is adversely affected by water. The disc brake also has a penchant for squeaking.

A squeaking disc irritates everybody and makes people glare with the message that says: "Get that thing fixed." While many have given up all hope of finding a cure and have resigned themselves to the noise, there are solutions to the brake squeak problem.

A squeaking disc has a not-socoincidental resemblance to the sound a violin makes when tortured by a beginner. The cause of both sounds is the same-stick-slip vibration. Here's how this vibration originates: The effort required to start an object sliding along a smooth surface is greater than the amount of effort required to keep it moving. This initial friction is often referred to as "stiction." Sometimes a special condition can arise that will prevent the subsequent motion from being smooth. When this condition exists, the normally smooth sliding motion is replaced by a series of starts and stops as the object sticks-and-slips along. As the bow string is pushed against the wire violin string, the resin applied to the bow adheres to the violin string and flexes the string to the side. When the increased tension resulting from this deformation becomes great enough, the violin string breaks away from the bow and begins to vibrate at a frequency determined by its length, tension and diameter. This process is repeated as long as the bow is moved against the violin string. We hear the vibrations of the string as sound. If it is a pleasing sound, it is an element of music; if it is not pleasing, it is a squealing unpleasant noise.

Most rigid materials have the capability of vibration and can produce sound. The stainless steel rotor of the typical disc brake will ring like a bell when struck. Its ringing is determined by its shape, weight and the nature of the material of which it is made. A disc brake squeals when the brake pad is sticking and slipping; this stick-slip vibration will occur at the normal ringing frequency of the disc. The actual stick-slip movement is not between the disc and its brake pad but rather between the pad and the caliper which holds the pad in position. The pad will actually vibrate in the caliper and excite the disc to ring. Damping this vibration can be achieved in a number of ways.

The most common brake squeak occurs when the brake is applied lightly while coming to a gentle stop. This squeal can normally be avoided by simply applying more pressure to the brake. However, since brakes are supposed to serve the rider and not the other way around, something can and should be done about this squeal. Often when the brake is applied hard from around Uncle Sugar's legal speed limit, light brake squeal will cease for a day or two. When occasional hard use does not eliminate brake squeal, one must get out the wrenches.

Remove the pads from their caliper (using a factory shop manual as a







The same vibration that causes squeak cut the large circle in this puck. The cure is to grease the circle and any other shiny areas which indicate telltale metal-on-metal rubbing. Bel-Ray Molylube works well. quide) and inspect the contact face. If foreign bits of metal are embedded in the pads, these bits should be removed by sanding or filing while being careful not to destroy the flatness of the surface. Inspect the contact areas between the pad and the caliper. There should be a viscous grease between the pad and its contact points with the caliper. Often the grease applied by the factory will not be of sufficient quality or quantity to provide the slippery surface needed to ensure smooth movement between the pad and the caliper. This grease must have three characteristics: (1) it must provide lubrication under great pressure; (2) it must act as a damping medium to prevent the onset of squeal; (3) and it must not liquefy at the high temperatures encountered in disc brake operation. One grease we have found to be extremely effective is "Molylube," an anti-seize lubricant from Bel-Ray Co, Inc., Box 526, Dept. MC, Farmingdale, NJ 07727. If your local motorcycle dealer cannot supply you with Molylube, contact an auto parts store. Molylube sells for about \$3 for a 10-ounce container.

Carefully apply small amounts of lubricant to the shiny areas (caused by rubbing) on the back and edges of the brake pad. These polished surfaces bear the total force of braking. The viscous grease surrounding and separating these areas of con-

tact between the pad and caliper must prevent stick-slip vibration from starting and, if it does occur, of damping the vibration. Be careful not to become too generous with the grease; remember, it is grease and if any gets on the face of the pad, braking effectiveness will be reduced.

Another squeak cure comes from the Permatex Corp. which supplies an aerosol material that is sprayed onto the clean back of the brake pads and allowed to dry for three hours. Because it remains gummy and adheres strongly to the back of the pad, "Disc Brake Quiet" is very effective and will often cure disc brake squeak anywhere from several weeks to permanently.

A third solution comes from roadracing. Normal disc-brake pad material will overheat and fade under the harsh demands of racing, but high-metallic-content racing pads are more resistant to this extreme use. However they require more lever pressure to produce the same braking force. An offsetting benefit to this is that English road riders have discovered these racing pads perform much better in the rain than do the original equipment pads. Additionally these high-metallic-content racing pads have been found not to squeak. Sudco International now supplies metallic disc brake pads produced by the Japanese firm, Vesrah.

If, after trying hard use, grease, goo and exotic parts, you still have problems with squeak, there is one sure cure: holes. Holes in the disc will prevent the onset of stick-slip vibration. Drilled disc rotors have several advantages and few disadvantages. When normal, undrilled discs are used in the rain, the pads have a tendency to ski on a film of water so the effect is the same as rod bearings in a plain-bearing engine skiing on a film of oil to separate the metal parts. The disc becomes a bearing more than a brake. Drilled discs allow the water to be squeezed from between the pads and the disc into the holes and braking force is quickly restored. Drilling disc rotors is not a simple task and should be done by someone with proper equipment and experience with machining stainless steel. The holes should be no more than about a quarter-of-an-inch in diameter and should not be chamfered. Large holes can seriously reduce the working area of the disc and are not as effective in shedding water as are many smaller holes.

Rear disc brakes squeak more often than front discs. There are two main causes for this: improperly adjusted foot brake levers and aeration of the brake fluid. If the rear brake lever is adjusted too high, the rider's foot can rest on it and cause the pads to be pushed into light contact with the disc. This will result in high temperatures and glazing of the pads, both of which can lead to brake squeal. Since rear brakes are not in the cooling air flow, they tend to operate at higher temperatures than do the front brakes. When the brake fluid reaches about 220 degrees Fahrenheit, water absorbed into the fluid will boil out and produce water vapor. This vapor will exert a pressure on the pads and hold them in contact with the disc-producing drag. Silicone brake fluid (D.O.T. 5) does not absorb water and has a boiling point in excess of 500 degrees Fahrenheit. Use of this brake fluid should eliminate much of the drag and squeak that many of us experience. D.O.T. 5 silicone brake fluid can be purchased at all Harley-Davidson dealers and most other local dealers and parts stores.

Any one or a combination of these cures may be used to eliminate disc brake squeak. From the standpoint of results obtained for expense and effort required, greasing of the contact surfaces using Molylube is the most successful. However, drilled discs and metallic pads do have the distinct advantage of performing better in the rain. Whichever path you take, may all your stops be quiet and upright.

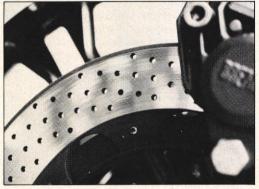




"Disc Brake Quiet" by Permatex forms a tacky insulator on pucks after it's sprayed on their back side. This cures squeak permanently on many bikes.



Certain high-performance racing pucks simply do not squeak. We're familiar with the Vesrah brand.



A drilled disc will almost always interrupt the harmonics which sustain squeak-causing vibration. Drilling is expensive.

the front of the outside pipes, which can be tricky.

Oddly enough, the CBX's engine asked to be ridden harder than the GS1100's. When carving through the canyons, the GS1100 gets uncomfortably buzzy at high rpm, which discourages you from winding it up frequently. The CBX actually seems smoothest when it's shrieking. Since the CBX is also a bit peakier and since it has an exceptionally smoothshifting gearbox, it's quite comfortable when being revved like a roadracer. The GS1100 is more of a torquer so it can usually keep up with a little less revving and shifting. However, the GS must be wound up past the point of comfort to keep up with the CBX if the Honda's rider is using redline as his shift point.

The fact that the Honda could be revved to redline probably worked against the CBX in one respect. During our day in the mountains, we got the CBX's fuel mileage down to 29 mpg. The Suzuki never got below 36 mpg, partially because it wasn't run at high rpm as often. Of course, the lighter, narrower, torquier Suzuki would have gotten better mileage under any circumstances, but the difference probably wouldn't have been so great.

Besides its vibration, the Suzuki's engine slightly diluted our mountainroad fun in another way. The 1100 suffers from a drive-train snatch problem. Not terribly, but more than the CBX, (which is excellent in this respect,) and more than the last GS1000 we rode (which didn't have CV carbs). Some of the snatchiness comes from the 1100's drive-train lash and some from the abrupt response of the lean-mixture CV carbs. The Honda's accelerator pump probably helps overcome the problem in the CBX. In the GS, especially in the lower gears, you have to be extra deliberate when rolling on the throttle in slow corners. If you just roll it on normally, you get an awkward lurch.

DAY FIVE: THE HIGHWAY

Presumably any large displacement street bike will serve time as a tourer, eating up miles on the wide-open super-slab and gliding along little-used back roads. Both the CBX and the GS1100 have more than enough power and torque to launch themselves effortlessly past slow-moving trucks, even when touring with luggage and a fairing. As we'd already found out at the dragstrip and on the back roads, the Suzuki has a slight edge in acceleration and torque, but both these superbikes

can pass as quickly as anything on the road.

However, there's more to touring than how fast you can get around laboring moving vans. Other considerations on those day-long jaunts or month-long cruises include comfort, fuel mileage, maintainability and reliability. On our long cruises on Southern California highways, we soon realized that neither of these machines has first-class accommodations for the long-distance road rider, although the Suzuki is better. Within 50 miles on its hard saddle, the CBX had us squirming around, wishing for more padding. The Suzuki's saddle



was petter; it took about 100 miles before we began to shift around, trying to put the pressure on different parts of our buns. The 1100's seat is not nearly as good as the seat on the GS1000 or GS850. Thankfully, neither the CBX nor the GS1100 has a seat with a big step, so riders of different sizes can all find seating locations which fit their builds.

We had no complaints about footpeg location or handlebar bends. In the case of the CBX, you'd better like the handlebar shape since it doesn't use conventional handlebars. Instead it has alloy forgings which clamp around the fork tubes like clip-ons but above the top triple clamp. These bars' locations are fixed by pins, but there is some leeway for adjustment. If you don't like the bend or height of the stock bars, there's only one expensive alternative: the lower European bars available from Honda dealers in the GP kit. We know of no one making replacement CBX bars.

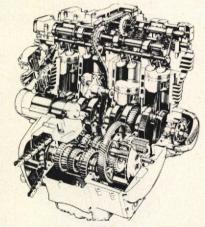
The two bikes are about even in vibration. Some vibration reaches you through the CBX's handlebars when cruising at steady speeds, but it is much smoother than the 1100 during acceleration and at high rpm. The GS1100 is smooth at cruising speeds but buzzes noticeably during acceleration and annoyingly above 6000 rpm.

The GS1100 had a definite edge in ride quality. When set up with its softest damping and preload settings, it insulated us from the constant bump-bump-bump of the seams in concrete slab superhighways and from other small road irregularities.

However, even with stiffer settings the Suzuki's rear suspension did bottom occasionally on large bumps, especially when carrying a passenger or during cornering. The CBX's suspension never bottomed, but it did transmit all the small bumps to the rider, even with the softest suspension settings. This becomes uncomfortable after a while, especially with the hard seat.

Neither bike has any noises to irritate you or any odd bulges to prod you. Both have light throttle return pressures for long hauls, accurate 85-mph speedometers for the sake of your driver's license and bright H-4 headlights for night riding. However, the pattern cast by the Honda's round beam seems superior to the Suzuki's rectangular beam.

We averaged about 39 or 40 mpg while touring on the CBX and about 44 mpg while cruising on the GS1100. That means that the Suzuki (at about 220 miles) offers about ten miles more range during steady-speed touring, despite having 0.3 gallon less fuel capacity than the Honda. Suzuki says they may offer the European GS1100 tank, which holds an extra gallon, as an option. The CBX has a conventional reserve system, but the Suzuki has no reserve. In fact, it doesn't really have a



petcock. The 1100 has a vacuumoperated valve in place of the old
petcock. There's no handle on the
petcock, but inserting a screwdriver
blade into a slot and turning to the
"pri" position allows fuel to flow to
the float chambers if the bike has
been out of use for a while. Suzuki
has followed the path of Volkswagen,
introducing a fuel gauge and retaining the reserve system for a couple
of years thereafter. Now there's just
a fuel gauge. If you don't trust that,
you can always use the old
slosh-and-listen technique.

Both bikes have chains, which may worry some potential buyers who want to go touring frequently. It wouldn't worry us. The massive 630 chain on the Suzuki didn't stretch significantly in over 1000 miles of

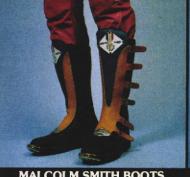
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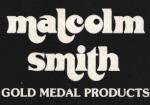
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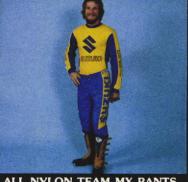


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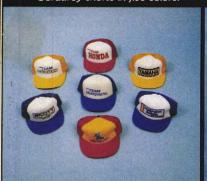


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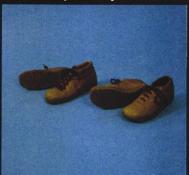
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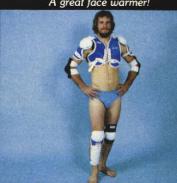
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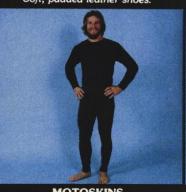


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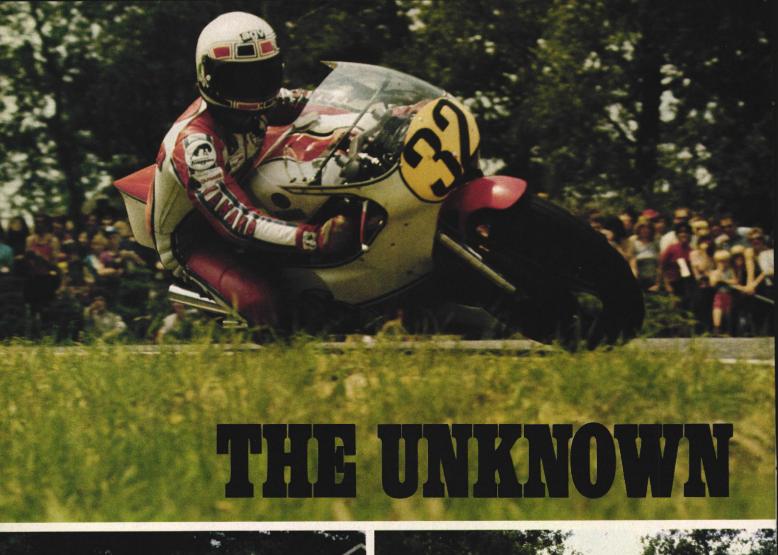
three come with leading axle air forks up front. In back, the box-type aluminum swing arm is linked to laid-down gas/oil shocks.

Speaking of the back, riders are saying nice things about the quick-change rear wheel assembly and the new roller-type chain guide.

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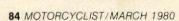
Now you know why the other guys will be mining for silver in 1980.













ext June, if you have a free weekend, you might consider flying to Amsterdam, and from there, making the hour-and-a-half trip to Raalte and the international road races at the Luttenbergring. You would have a great deal to reflect on during the return flight, for the racing, and the way it is organized, and where it takes place, cannot be compared to anything in America. Raalte is in eastern Holland, with enough distance between itself and the North Sea to be spared the wind and rainravaged landscape one finds on the Dutch coast. Raalte has an abundance of green fields, red-roofed farm houses and oversized cows grazing in the shade of towering green trees. Houses, cows and trees give the Luttenbergring a unique character.

When I told two of the race organizers, Coen Verburg, a magazine editor, and Hank Aa, a businessman, that the Raalte races, which I witnessed for the first time last year,

were quite unlike anything I had seen before, they seemed pleased. Quickly and somewhat pointedly, however, they impressed upon me that Holland's greatest race takes place yearly at Assen. Assen has a four-milelong road course, an annual crowd of almost 120,000 and a regular place on the World Championship calendar. How impudent it would be, they said, for them to compare Raalte with Assen! Raalte isn't grandiose and, thankfully, doesn't aspire to be. It is a modest race conducted in a small city in an out-of-the way part of a drowsy country and at a time of the year when the Grand Prix season is on its summer vacation. Nobody, or almost nobody, is uptight, and the host organization, the Raalter Automobeil en Motorclub (RAM) is one of Europe's most gracious and accommodating. The atmosphere is what the Dutch call gezellig, cozy.

In 1979, as it had the seven previous years, The Swan, Raalte's fore-

most and most stately hotel, hosted 150 journalists, townspeople, and boosters to a buffet, cocktails, and news conference on the Tuesday evening before the eighth annual race weekend. What always makes the occasion more than just another booze party is that it provides the opportunity to be dazzled by the glittering list of international riders that Coen Verburg and Hank Aa have signed up this time. Raalte is not a GP, but the entry list has all the status of one. Raalte tradition is that each year's entry must be more formidable than the previous year's; and next to the lavish party at The Swan, the two most immodest things about Raalte are the quality of the riders who compete and the number of guilders it costs to get them to. A burst of appreciative, nationalist laughter went up when Verburg drolly complained to the audience that it was becoming increasingly difficult to find foreigners willing to race Wil Hartog, Boet Van Dulman and Jack Middleburg, Holland's world-class trio, at any price, particularly in their own country. Nevertheless, he went on, a stellar field was again coming, including Swiss, English, Finnish, French, Belgium, German, Portuguese and Japanese competitors, and, as usual, one American. Americans are popular in Raalte. Pat Hennen raced in 1976 and Steve Baker (who went on his head) in 1977. The prominent American in 1979 was to have been Randy Mamola, but when he returned his contract the previously-agreed-upon starting money he was to receive was crossed out and a figure two-and-a-half times its size penciled in. Not even the generous Raalte organizers were inclined to be that generous. In Mamola's place they had invited Mike Baldwin, who had accepted.

The inability to sign, for the second year in a row, Kenny Roberts, was announced with considerable regret. In 1978 Roberts had asked for more starting money for himself than was being paid to all the riders (not, apparently, out of greediness, but because coming to Raalte would have meant forgetting about the two-week vacation that the homesick World Champion had promised himself in California). Knowing in 1979 that only a king's ransom would bring Roberts to Raalte, the organizers had somehow raised a king's ransom. Through a mix-up at the Spanish Grand Prix, they'd been unable to get word to Roberts in time to stop him from boarding his evening flight back to

Without Roberts, the topper was Barry Sheene. How many guilders it had cost to get the Englishman, his

GRAND PRIX

Suzuki fours hit 135mph between the trees. Where there isn't a tree, there's a house. Or a car.

Barry Sheene is one of the world class stars who gives the Raalte race GP status even though it isn't an official FIM Grand Prix. On the color page that's Steve Baker (32) on top, a pack led by Wil Hartog in the middle and Barry Sheene doing the wheelie to please the crowd. Would you ride 155 mph on that narrow strip of pavement between the trees?

By Joe Scalzo





faithful blond girlfriend Stephanie McClean and Sheene's entourage of mechanics and equipment, including two works Suzuki 500s, was something everyone would like to know, Verburg admitted, but for politeness' sake he hoped no one would ask. "You wouldn't like it if Barry asked how much you made, would you?" In Holland it would be inhospitable and therefore unpardonable.

A little later Verburg and his friend Aa told me more about the races. "The real idea in back of Raalte is that everyone who comes here must have a good time," Aa began. "Our association is a non-profit one and nobody involved with the races makes money from them. We are all enthusiasts and we want to put on the best show for the riders and the public that we can." Verburg said, "In 1975 we had 14,000 at our races and last year we had 29,000. This year we're hoping for 35,000. We've spent more on publicity this year than ever before. Whatever money we make gets put into the association's bank account and is spent on improvements to the circuit and for starting money. But the main thing is that everyone enjoy himself and have a good time."

On Saturday morning I tried to find my way to the Luttenbergring, which is on the outskirts of Raalte. The road turned to dirt, then entered a The public roads of circuit Luttenbergring turn hard to mark the boundaries of farmer's fields and form esses. Here Dulman leads Sheene.

particularly dense forest, and just as my companion asked "Do you think this is the right road?" we came over a hilltop and in front of us were fields with cows grazing and motorcycles at speed already practicing. This was the Luttenbergring.

Named after Luttenberg, the tiny farming community whose public roads make up the circuit, is approximately two miles long and shaped something like a triangle with its left side battered and dented. Every corner has a multi-consonant name and it was arranged for me to be given an automobile ride around the track. My chauffeur was the assistant race starter. We set out, and when we reached the first right-hand corner, called the Koolhofbocht, my eyes came to rest on some curtains, then on some potted plants of the type Dutch women love to display in the scrupulously polished windows of their homes. Unmistakably I was

looking at a window and a house. Just as I was wondering what in the world a house was doing where in America an escape road or a crashwall would be, we rounded the corner and a long line of houses followed the first one. What looked like entire families were sitting in lawn chairs in their front yards only a few feet from the circuit and there were more jolly faces smiling out of some of the windows. For the rest of the lap I saw more farmhouses, mailboxes and at last, along the 2625-foot-long Hellensdoorseweg straightaway, trees. Big, strawbaled trees. They stood on both edges of the road, which was the equivalent of two passenger cars wide, right where Mike Baldwin later estimated that a Suzuki 500 was cutting approximately 155 mph.

"Dangerous?" my driver replied to my question. "Not if a rider uses his head." Later I was shown all of Raalte's safety paraphernalia, including a video room in the back of a truck trailer where television screens showed every corner. If there was an accident, one of three ambulances and five doctors was dispatched immediately. And an adjacent dairy had been converted into a hospital for the weekend.

Thorough as the system seemed to be, Barry Sheene found some holes in it and his improvements were

quickly implemented not just because he is a notorious bug on safety, but because he was Raalte's honored guest. He wanted the ambulance placements changed and they were. Sheene also would have enjoyed seeing all the trees axed, but there is a law in Holland making it a crime to cut down a tree without permission. "We've been trying to get permission, for two years, to cut down just one tree," Verburg told me. Sheene seemed more concerned about the gravel the 500s were bringing up off the pavement than he was about the trees; the stones were turning his body red, he cried, and threatening to pelt his Donald Duck trademark off his helmet. Personally, I never got over those trees. They were the only things to dampen my enthusiasm for

Saturday practice continued until 4:30 in the afternoon when it stopped abruptly and for the most logical of reasons: the circuit had to be closed and the roads opened again so that the farmers of Luttenberg could milk their cows. All of the farmers were smiling and, like the inhabitants of the houses along the circuit, with good reason: everyone goes richly rewarded every year by the race organizers who pay them what amounts to rent during the weekend.

Meantime, back at the starting line, what seemed to be a major disagreement-the only one of the 1979 weekend-was trying to break out. Jon Ekerold, shirtless and with one arm strapped to his chest, after sheepishly explaining to Verburg how he had fallen while practicing and broken his collarbone, was preparing to mount a vigorous demand for his starting money even though he obviously would be unable to race now. Ekerold is a South African, notorious for his hard riding and outspokeness. Everything about him from his eyes. belligerent tone of voice and posture suggested that he believed he was to be cheated out of his money. "I didn't come here to get hurt," Ekerold said. "I came here because I needed the money. You've used my name in advertising already. You have to pay me. If you don't, I'll ride two laps tomorrow with a broken collarbone and then, by the rules, you'll have to." Apparently in Europe it is normal for promoters to get out of their starting money obligations if they can. But at Raalte, Ekerold's anger was wasted. Not only was he immediately paid the full amount, but Verburg turned him over to Wil Hartog, who got in touch with his personal surgeon in Haarlem, who scheduled an operation for the South African that night.

I spent Saturday evening in The

Swan where Barry Sheene, unlike the rest of the field who chose to camp overnight at the circuit, was lodged. He, too, came in for some extraordinary hospitality. The upset Sheene had been given Room 5, not 7, the number that, out of superstition or pure showmanship, he insists is his lucky one. Verburg was called in and, with many apologies, arranged for Sheene to get Room 7 after its occupants were evicted.

Sunday was a day of stunning blue skies, a perfect racing day, warm by Dutch standards and thankfully free of the fatiguing humidity one normally finds in Holland during summer. A bus transported the riders around the Luttenbergring for the purpose of giving the crowd a look at them. The crowd found Sheene the most popular of all the foreigners (the toddler son of one of Sheene's mechanics successfully passed himself off as Barry Sheene's son in the pits and paddock, and spent the entire weekend trailed and surrounded by awed and admiring Dutch children). And Sheene, with his hyperactive ways, mischievous smile and fluent command of four languages, charmed everyone on the bus as well. He joked in French with Fernandez, Estrose and Coulon; delighted Middleburg and Van Dulman with his ability to commit to memory and pronounce perfectly the best Dutch swear words; and had Mike Baldwin rolling in the aisles when he shouted the American standard "show your . . . " to a well-endowed Dutch girl he saw in the crowd, who almost complied. On the basis of showmanship and personality, Sheene earned every guilder he was being paid. The crowd did not quite reach the 34,000 figure that Verburg and Aa had hoped for, but the majority who came undoubtedly came to see Sheene

A Dutch journalist asked Sheene if he had plans to become the first foreigner to win Raalte, taking the measure of Hartog (a six-time winner), Van Dulman and Middleburg. "I don't think I can beat Wil," Sheene said of Hartog, who was his works Suzuki teammate on the Grand Prix tour. "This is sort of a vacation for me. I have the Grand Prix of Yugoslavia next weekend. The other thing is that Wil is prepared to stick his neck out here. I'm not. He has to beat Boet and Middleburg at home."

Middleburg, however, had other ideas. He is the youngest and least known of Holland's three top road racers and he put himself and his Suzuki into an immediate and widening lead in the first of the two 15-lap features for the 500 class. Hartog lacked either the will or the machine

to challenge him-perhaps he, like Sheene, was thinking ahead to Yugoslavia. Sheene stayed in fourth place behind Van Dulman until the closing laps. Either because he believed he wasn't doing a very good job of racing for all the money he was getting or because he was fed up with Van Dulman's gravel, he overtook the Dutch rider and achieved a not dishonorable third place-even remembering to do a wheelie as he crossed the finish. The Dutch, like all European crowds. have a weakness for wheelies. Mike Baldwin was frequently on and off the course during a brakeless and hectic ride into fifth place. "It's short, it's very tight and it's dangerous,' Baldwin said of Raalte. "I wish it were faster."

I never checked to see what the price of admission was, but the crowd certainly got value for its money and came away having seen as much racing as it was possible to cram into one afternoon.

The second heat for the 500s was the afternoon's finale, with the unanswered questions being if Hartog could do more, Middleburg do as well, and if Sheene felt he had already given his money's worth. Middleburg led on the bump-and-run and before Hartog could even find his rhythm, he was missing. "Wil is kaput," one of the journalists said and Hartog, sure enough, was parked near the Hellendoornsweg with seized pistons.

Sheene got past Van Dulman early, but his subsequent taking the lead from Middleburg was more on account of the Dutch rider deliberately slowing than it was of Sheene going faster. Middleburg then lost a cylinder, but even on three was able to place third behind Sheene and Baldwin, who was charging as hard as ever. Middleburg was declared the race winner but everyone already knew that Sheene was the money winner. The race was finished just in time for the cows to get milked.

The Raalte organizers are a tenacious group and in 1980 hope to have Roberts in the field at last. Their starting money kitty is bulging, and they are sure that they can offer a figure that even Roberts won't be able to turn down. It is a sobering thought. Raalte is presently a great, get-away-from-it-all vacation for many of the world's best riders. But putting Sheene and Roberts, famous rivals that they are, on Raalte at the same time, both of them doing battle between the houses and along the treelined Hellendoorsweg would make this race lose its special ambience. No longer would Raalte be gezellig or unknown.

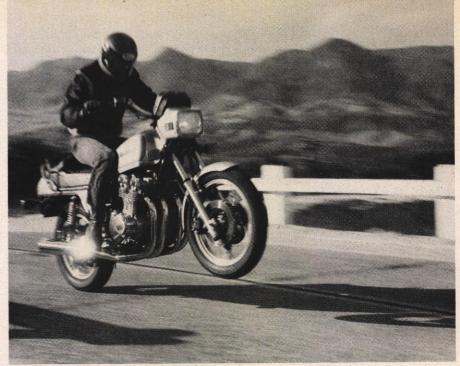
strenuous use. Honda says their 530 chain, which replaces the 630 used on previous CBXs, is stronger than the old chain, thanks to better materials, as well as being lighter and quieter. It didn't stretch either.

Since both bikes have electronically-triggered ignitions, you won't have to check timing on long hauls. CBX valve adjustment requires shims, but no parts are needed to adjust the GS1100's valves. The 1100 also has eight less valves to worry about during maintenance.

Honda boasts a bigger, stronger dealer network if you ever have on-the-road problems. The only problem we had with our CBX was a low-speed miss on one cylinder, apparently caused by a stuck float. It cleared itself up about the time we were getting ready to investigate. That's one of the drawbacks to six carbs—there's that many more chances to have a carb problem.

The Suzuki confronted us with several small problems in addition to the grabby front brake. One of its fuses blew, disabling the turn signals and headlight. This was easily repaired since it was one of the fuses in the regular fuse box under the left side panel. (There's also two in-line fuses in the headlight.) Getting at the GS1100's fuses is slightly easier than getting at the CBX's, which are on the top triple clamp under a screwed-down cover.

After a bit of peg-dragging, the 1100 lost its right footpeg rubber, which isn't bolted in place like the Six's. The Suzuki also used more oil (about a cup) than the Honda, which used almost none. We noted something else which could be inconsequential, or catastrophic. When the GS1100 was warmed up in the morning while resting on the sidestand, the oil pressure light always flashed on and off for the first minute or so. Apparently, the oil pump pick-up wasn't quite below the oil level, and was occasionally cavitating, even though the oil was at the specified level. It didn't happen when the engine was warm or when the bike was on the centerstand. This only seems to pose a potential threat to the top end, specifically the camshafts. The cams in the CBX (and most other bikes whose cams operate directly against the valve shims or buckets) turn over in a pool of oil which collects in troughs around the valve tops when the engine is shut off. This pool of oil lubricates these cams the first time they turn over. However, the cams in the GS1100 rely on oil sprayed from nozzles in the rock-



er shafts to lubricate the lobes. If the oil pump isn't picking up as much oil as it should, the cams aren't getting their full quota of oil. Honda had a similar problem with the old 450 twins, some of which ate camshafts regularly. This situation may be unique to our machine (which was a production bike) or the flashing oil light may not indicate a significant pressure drop. However, GS1100 owners who don't want to take chances can do two things: (1) Never run the bike on the sidestand, and (2) always be sure that the oil is kept at the maximum level.

The only other problem we had with the GS1100 concerned the clutch, which we'll discuss later.

DAY SIX: THE STREET

Most of the riding people do with these two motorcycles will be on city streets and boulevards, whether it's basic transportation, profiling or just riding. In city traffic the CBX will please you with its super-smooth gearbox, its terrific clutch and its good rideability. The Six warms up quickly and doesn't trouble you with flat spots or ragged throttle response. It pulls strongly and smoothly from 1500 rpm to the 9000-rpm redline. We've heard and read lots of praise for bikes with heavy flywheels, presumably because they make it hard to stall the engine. However, they also require that you carefully dial in the rpm after each shift or suffer from lurchy shifts. On the other hand, the CBX with its particularly light flywheels is tolerant of less precise engine-speed/road-speed synchronization. It also has plenty of low end, a useful first gear ratio and a progressive clutch, so even a moment's ineptitude shouldn't cause you to stall it.

The Suzuki also has good lowspeed power characteristics and a respectable gearbox, although one that isn't as quiet or smooth as the Honda's. It took a bit longer to warm up than the CBX. We also had extensive problems with the 1100's clutch. Like the CBX, the Suzuki was already the veteran of one road test. although the Suzuki had been taken to the dragstrip and the Honda hadn't. When we picked up the GS1100 from Suzuki after they had serviced it for us, we noted that the clutch dragged, making shifting extra stiff and making neutral-finding almost impossible. We tried adjusting the clutch, but it would begin to slip before the dragging disappeared. After our dragstrip and dyno testing and some determined thrashing on back roads, the clutch began to slip, so we took it apart and sanded the glaze off all nine metal plates. That cured the slipping, but it still dragged. It even dragged when it was slipping. Finally, we arranged to ride another GS1100, a newer one. That one's clutch didn't drag at all. At that point we would have forgotten the whole business, figuring ours was a fluke-except that we talked to the service manager at a Suzuki dealership who says he's seen a few other late-model Suzukis with clutchdrag problems. So the possibility remains that, after hard use, other 1100s can have the same problem.

The Suzuki was a bit easier to manage than the Honda in tight situations. The GS felt more nimble when making full-lock U-turns or while dodging through traffic. The CBX wasn't a handful, but the extra weight was noticeable.

Our day of intensified city riding continued on page 124



Why did Bob Larkin buy the KZ440LTD with its 58 mpg?

Because Bob always believes in going the distance.

When Bob swung a leg over the KZ440 LTD and settled down into the high-step, dualdensity cruising seat, he knew he was on a winner. The pullback bars seemed to reach for his hands. And a tap on the electric starter brought the call of the road from dual mega-

phone mufflers. Who could resist? Its 443cc overhead cam engine with constant-velocity Mikuni carbs delivered plenty of torque, so he could accelerate quickly and cruise effortlessly. Bob liked the fact that it was Kawasakireliable. And he appreciated the advantages



of a silent cam chain with automatic tensioner. After all, there are better things to do on campus than to spend your free time working on a motorcycle.

When it came to handling, the KZ440 LTD exceeded his expectations. Precision-damped front forks and needle bearing swingarm gave him a real feeling of control and security. So did the drilled front disc brake. The fat rear tire provided lots of traction, and Bob sat down low with the center of gravity right under him. Riding it was a breeze—and sheer pleasure with a close friend on

When you stop by your Kawasaki dealer to see the slick looking KZ440 LTD, be sure to see both the chain drive and belt drive models. You might even take a look at the new KZ250 LTD. It's a little

smaller, but it's got some big numbers going for it. For openers, how's 80.2*mpg grab you?

Kawasaki Don't let the good times pass you by.



Did Jack Penton switch to Kawasaki's new KDX175 to finish 2nd?

Jack Penton didn't build his reputation on being second. When he switched to Kawasaki, he knew he was going to ride competition enduro bikes that were built to win. Kawasaki doesn't think there's any other way to build them.

With the introduction of the KDX175, they've truly achieved the state of the art. The engine and the frame are based on the factory KX125 motocross winners, and the suspension is the new Uni-Trak.™ That makes for a double whammy. Power and handling.

Take a look at this power plant. The 173cc

two-stroke engine cranks out lots of horsepower and the six-petal reed valve system gives you good, controllable low-end and midrange power. You get the best use out of this wide powerband through the quick shifting six-speed transmission. Kawasaki's exclusive Electrofusion cylinder resists seizure better than any other production process, and the special radial-fin head helps remove heat when you really start cooking.

Now, how does it handle? The KDX175 is light. Only 214 lbs. And it's narrow. Put them



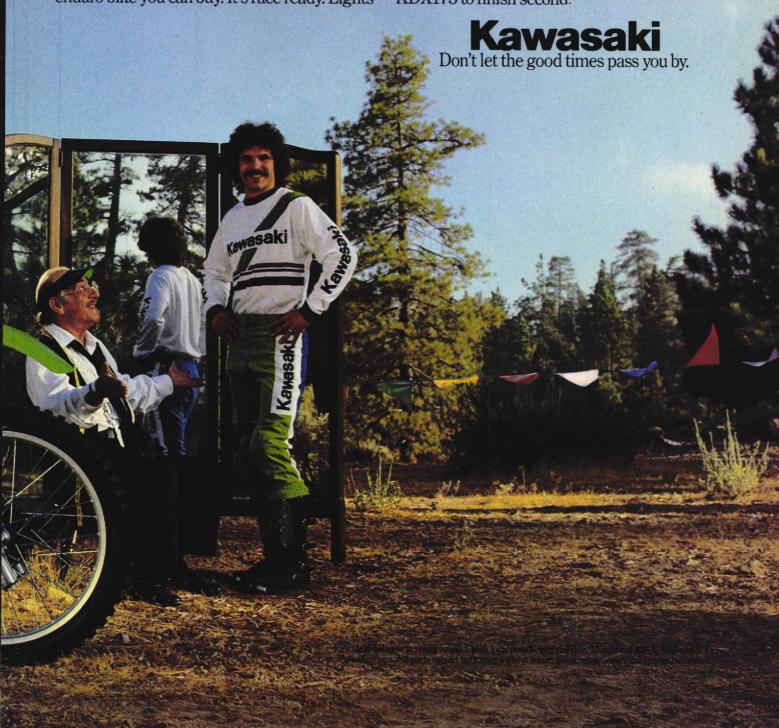
together and you can throw it around those vicious enduro courses. And the suspension? How does 9.8" of travel front and rear grab you? And the Uni-Trak is no ordinary suspension. It keeps the center of gravity low, and with only one shock you never have to worry about uneven damping. It'll keep you going straight over whoop-de-doos. Measured against any other form of suspension, it keeps the rear wheel on the ground longer. That's more power to the ground...and that's what makes you win. It is the combination of adjustable air-spring leading axle front forks and the Uni-Trak that gives you the trickest suspension on the market.

The KDX175 is the most innovative 175 enduro bike you can buy. It's race ready. Lights



front and back. A tripmeter/odometer, and a first class braking system including a floating rear brake.

If you want another opinion, just ask Jack Penton. He didn't switch to Kawasaki's KDX175 to finish second.



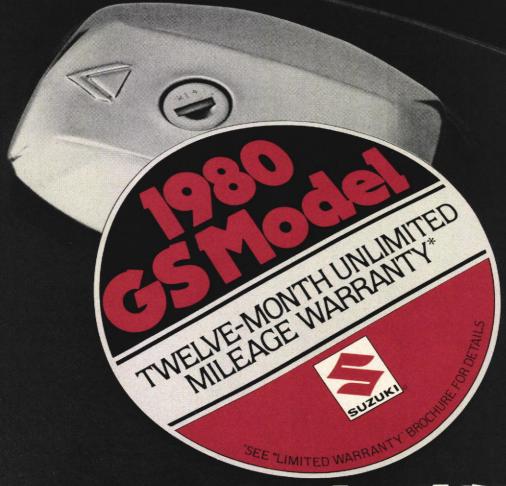
Nobody in the motorcycle business has more confidence in their products than Suzuki. And to prove it, Suzuki is backing <u>all</u> 1980 GS streetbikes with a 12-month unlimited mileage warranty.*

That's right, 12 months. One solid year.

Nobody else offers a warranty that good. But then

nobody else offers streetbikes as good as Suzuki.

*See "Limited Warranty" brochure for details. This warranty furnished only in the 48 contiguous United States and Alaska.



NOW THE BEST BIKES COME WITH THE BEST WARRANTY.

SUZUKI 1980
The Performer.

CATALOGS

YAMAHA PARTS DISTRIBUTORS,

INC. has a beautiful color accessories and apparel catalog full of goodies for riders of all brands. Some of the highlights of



the 32-page book include snowmobile-style winter riding suits (which we use on cold rides), stylish leather jackets (to save your hide when you high-side), a new line of Snell-approved helmets, sweaters, Barbour suits, rain suits, goggles, gloves, MX jerseys, MX leathers, lubricants and a full line of touring accessories for Yamaha motorcycles. Grab on to one at your Yamaha dealer or write for it free from Yamaha Parts Distributors, Inc., Dept. MC, Box 6610, Buena Park, CA 90620.

DAMART THER-MAWEAR may be able to help you out if you've been noticing a chill wind gusting in over your socks on these cold winter days. Besides show-



ing dozens of women in their underwear (always a good way to warm you up), this 48-page color catalog lists a variety of base-layer clothing for frosty winter rides. A supplier to the U.S. winter Olympic team, Damart sells long underwear, glove and mitten liners, socks and body belts in a wide range of sizes for men and women. To get the free catalog, contact Damart, Dept. MC, 1811 Woodbury Ave., Portsmouth, NH 03805. Tell 'em the Hulk sent you.

POWROLL offers many different ways to quench your power thirst with their latest catalog listing performance parts for the popular thumpers. Also included are



hop-up kits for Honda, Kawasaki, Suzuki and Yamaha multis. They offer anything from full-blown trench-digger kits to mild hop-ups. They specialize in Hondas and have kits for most models from the littlest XR to the big street bikes. Send \$3 to Powroll Performance Products, Inc., Dept. MC, P.O. Box 1206 JM, Bend, OR 97701.

LETTERS continued from page 13

OSSA OOPS

I wish to take exception to the December article "Ten Years After" which implied that Ossa did not survive the Seventies.

Please be advised that we have been selling Ossa motorcycles, including the ST-1 short tracker which we built here in Schenectady, continuously throughout 1977, 1978, and 1979. Further, the Ossa factory has been manufacturing motorcycles on a continuous basis except for a five to six month reorganization period during 1978. Ossa has displayed their new 350cc trials model at the recent Milan show. Production on that model is to begin in March, 1980.

Ossa sales will be offering to the U.S. market during the 1980 sales year, the following models: 1980 250cc Super Pioneer, 1980 250cc Desert Phantom (ISDT model), 1980 350cc Plonker.

John A. Taylor, President Ossa Sales Corp. Schenectady, NY

LIMEY LAMENT

Your article on the 1970s was good, and I'd like to mention something about why the Limeys went under. In 1970, or so, the British put on a huge trade show here in San Francisco—about the biggest I've ever seen—lasting two weeks. It was all over the town. I went to one exhibition put on by the London trade council showing various British exports—from China dishes to Rolls Royces. Were any motorcycles shown? Hell, no. BSA did have a stand showing—BSA bicycles. I wonder how much difference in the

trade deficit BSA bicycles made. Have you ever seen a BSA bicycle?

A few years after this, I met a fellow who had been traveling around the world for five years on a Triumph. He had personally been responsible in persuading a number of Latin American countries in buying Triumphs for their police and military. Would Triumph or the British government help him in any way? Hell, no. At least Chrysler gives Ricardo Montalban a new Cordoba every year for his advertising efforts.

Vaughn M. Greene San Bruno, CA

HOREX HELP

I have acquired a 1954 Horex Regina 400. If any readers would have knowledge of parts, history, or trivia concerning this bike, I would gratefully like to hear from you.

Michael Williams Alliance, NE

NORTON OWNER'S CLUB

A local chapter of the United States Norton Owner's Association in Michigan is now forming and any interested owners should contact: Jim Dyki, 3202 East. Division, Detroit, Michigan, (313) 893-3542.

Jim Dyki Detroit, MI

MV OWNER'S CLUB

I wanted to take this opportunity to announce the formation of the MV Agusta Owner's Club in England. Interested parties should contact the club secretary, Mr. P. Ide, 6 Turner Rd., Tonbridge, Kent TNID 4 AH, England.

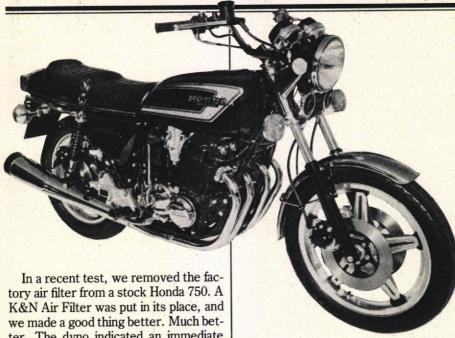
Dick Vaughn Wexford, PA





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Put in a K&N, put out more power. K&N boosted this bike's HP 18%.

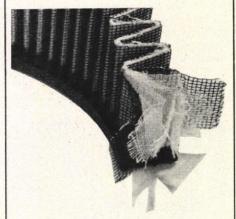


In a recent test, we removed the factory air filter from a stock Honda 750. A K&N Air Filter was put in its place, and we made a good thing better. Much better. The dyno indicated an immediate jump of 6 horsepower! A whopping 18% increase! The same thing could happen to your bike, with no other alterations, except changing the air filter! Surprised? You won't be after learning the facts about K&N. (By the way, K&N makes replacement filters for just about all motorcycles, cars, trucks, vans and off-road vehicles.)

You probably know that an engine's power output is proportional to the rate at which it induces air into the cylinders. And torque output depends on the amount of air drawn into the cylinders at each induction stroke. Obviously, if the filter is clogged or restrictive in design, both rate and amount of air entering the combustion chamber is adversely affected.

K&N Air Filters are constructed of a series of layers of high-quality surgical cotton gauze, saturated with oil, and sandwiched between 2 layers of wire mesh. Each strand of gauze has countless microscopic, oil-covered hairs extending in all directions, to catch and hold dirt particles.

Dirt and foreign matter collects on the outside of the filter, while the inside remains clean and new looking. Proof



that only clean, filtered air is entering your engine. Meanwhile, clean air flows freely into the engine through spaces around the trapped dirt particles.

The K&N Air Filter also has a special accordian-fold design. This design exposes a larger area for catching and holding dirt. At the same time, it provides a

greater area for air to flow into the engine and maximize power.

These features have proved their superiority time and time again. We've conducted flow-bench tests on scores of K&N Air Filters, after they've been in use for many thousands of miles. This same test was applied to K&N's that finished the grueling 1,000 mile Baja race. In every instance, there has been virtually no air restriction. In fact, the "used" K&N Air Filters performed better than any new foam or paper filters tested.

With their combination of excellent air-flow and protective filtration, you can understand how K&N Air Filters boost horsepower—not to mention their ability to increase spark plug and engine life, thereby reducing maintenance. K&N Air Filters may cost a bit more than others. But if you're truly performance-minded, can you afford anything less?

You'll find a K&N Air Filter to fit your machine at most leading motorcycle accessory dealers. If, for some reason there is no K&N dealer near you, write or call us. We'll help you locate one. If you wish, send \$2.00 for a K&N Motorcycle catalog listing complete filter specifications, part numbers and prices.





TIRE BUYER'S GUIDE continued from page 49

Model	Size	Price	Remarks
MT 28	3.50V19	N.A.	
Phantom	4.10V19	N.A.	
	100/90V19	N.A.	
MT 29	100/90V18	47.50	Front: tube type,
Phantom	4.10V18	48.50	semi-rib, high-speed
	100/90V19	48.50	stability, grooves
	4.10V19	48.50	channel water away
	3.60V19	N.A.	from contact patch.
MT 53	5.10S16	51.90	Rear: tube type,
Studded			suitable for unsurfaced roads.
MT 76	3.00S18	18.50	Front: tube type,
Ribbed	3.25\$19		designed for maximum
	3.50S19		steering accuracy.
			A STATE OF THE PARTY OF THE PAR



YOKOHAMA

Model	Size	Price	Remarks
Y957	MT/90-16	\$43.51	Rear: tube type, touring tire for Harley-David-
			son.
Y983	4.10H18	43.15	Rear: tube type, high
	4.60H18	47.28	speed tire, 80-percent
	4.10S18	43.67	aspect ratio, match for Y984.
Y984	3.60H19	39.69	Front: tube type, high
	4.10H19		speed tire, 80-percent
	3.25\$18	32.10	aspect ratio.
Y986	3.25H19		Front: tube type,
	3.00S18		designed for high-
	3.25S19	36.08	mileage, round profile.
Y987	4.50H17 (T)	46.75	Rear: tube or tubeless
	3.50S18 (T)		tire, designed for high-
	130/90S16 (T 130/90S16 (T		mileage.
CHS	130/30310 (1	L)47.34	
Y988	3.25V19	38.92	Front: tube type,
			high speed, high-grip,
			80-percent aspect ratio.
Y989	4.00V18	48.02	Rear: tube type,
			match for Y988 high
			speed, 80-percent
			aspect ratio.
Y990	3.50H19	41.01	Front: tube type, ribbed
	3.50S19	41.25	tire, maximum braking, round profile.
Y992	3,60S19	35.64	Front: tube type,
		23.0	high-speed perform-
			ance,80-percent aspect
			untle .



AS YOUR RIGHT TO RIDE

continued on page 98

more magazine

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Ncicolm Smith

OFF-ROAD RACING CHAMPION AND MOTORCYCLIST.

"When I race off-road,
I ride safely and respect my
opponents. The same rules apply
when I ride off-road for fun."



MIC

SOUND INTERCOM: The Sound Investment

Sonic Intercom lets rider and passenger converse without shouting or taking their eyes off the road. The control box also can feed music from a radio or cassette into the earphones without affecting microphones so users may talk over news or music. Individual volume controls let each set sound level wherever they like it. Normal traffic noise, buzzers, engine still are audible. Earphones and mike merely press on any brushed nylon helmet lining.



Subminiature transducer microphone (1) fits into any type of helmet as shown. Flexible extension tube in open-face helmet eliminates wind noise yet catches the softest conversation without distortion or feedback. Stereo-effect earphones (2) require no helmet modification to fit. Pull-apart plugs (3) link helmet systems and control box for absolute safety. Cast alloy control box (4), the "brains" of the Sonic Intercom system, houses the subminiature printed electronic circuitry, individual volume controls and long-life PP3 9-volt battery (supplied).







MEBCO MOTORCYCLE ACCESSORIES BOX 429 - VENICE, CALIF. 90291 TIRE BUYER'S GUIDE continued from page 97

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BRIDGESTONE

2160 West 190th St. Torrance, CA 90504 (213) 320-6030

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P.O. Box 99 Carlisle, PA 17013

CHENG SHIN

20720-D S. Leapwood Ave. Carson, CA 90746 (213) 770-2342

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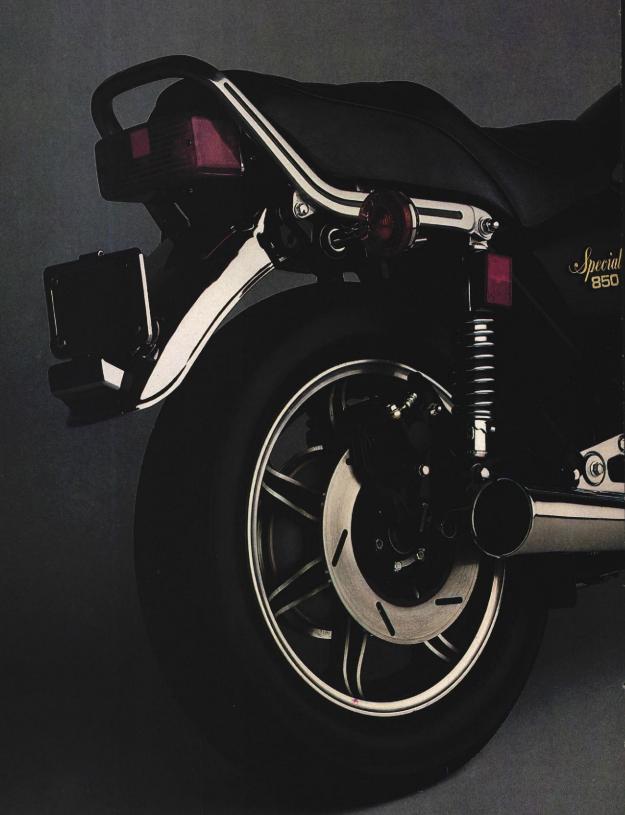
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YOKOHAMA

1530 Church Road Montebello, CA 90640 (213) 723-9691



NO OTHER MOTORCYCLE MANUFACTURER CAN MAKE THIS STATEMENT:





The 1980 Yamaha XS850 Special is a striking example of just how far Specials have come in three years.

And just how far the competition has to go to catch up.

The clean, fluid downlines formed by the classic teardrop tank and side covers reflect the years we've spent refining our original design.

This year, by cleverly restructuring the frame geometry and

seat mounting system, we not only integrated the seat with the frame but lowered the seat height significantly. So at the stoplights, you get feet-on-the-ground stability, and on the road, a feeling of sitting "in" the seat instead of "on" it.

And that new cast alloy grab rail is not only an attractive accent, but allows the taillight to become an integral part of the tail configuration — with twin bulb lighting for insurance

But perhaps the biggest news about this machine is the ferocious 826cc powerplant. It's a triple. Yet it puts out all the power of a four. And its narrow profile allows for remarkably nimble and responsive handling

An ingeniously engineered direct-coupling shaft drive translates the enormous power into quiet silky smoothness. And an oil cooler means you'll roll for thousands of hasslefree miles.

Additional goodies include one-piece cast alloy wheels, tubeless tires front and rear, new drilled triple disc brakes, and a couple of delectable colors.

Black Gold and Carmine Red.

The new XS850 Special. A statement of the art by the original artist.

YAMAHA

When you know how they're built.

SPORT

Superbikers: A Bad Day For Three World Champions

The idea isn't exactly new but there were a few fresh wrinkles this time. Pitting top riders from various forms of motorcycle competition against each other has been tried before at the Olympiad, a five-event competition held at California's Saddleback Park. This winter a new do-it-all competition, called the Superbikers, held at Carlsbad Raceway near San Diego, made a few important changes. First, it was a one-course event. Instead of using a series of different kinds of tracks, the Superbikers used a single course which included a



Kent Howerton pressures Kawasaki's newest rider, Warren Reid, as the two MXers dice for the lead on the pavement.

paved 1.1-mile roadrace/dragrace section and a 0.9-mile dirt section with a TT/motocross area and a big sweeping lefthander for the flattrack and speedway riders.

Secondly, the event was sponsored by and run for ABC-TV's Wide World of Sports, to be aired during February with the Olympics. Motorcycle races don't always draw large enough crowds to pay fat purses, but because motorcycle races on TV always seem to attract larger-thanaverage audiences, ABC Sports could guarantee a large purse, even

if no one came to spectate. The money also attracted three World Champions: Kenny Roberts, the popular 500cc roadracing champ from America; Hakan Carlqvist, Husky's Swedish 250cc motocross champ; and Peter Collins, the English world speedway champion. The rest of the field was composed of American riders plus Gerrit Wolsink, the second-place rider in world 500cc motocross now riding for Maico.

PHOTOGRAPHY: ART FRIEDMAN

Things got off (no pun intended) to a bad start for Roberts. As he pitched his TT500 special sideways

IntegralNava2 goes 1-2-3...

Now Europe's number one selling helmet comes to America with a new concept in design and safety. The sleek Italian styled IntegralNava2 features a unique three-position "Speed Control" face shield which, when you accelerate, automatically lowers ... and then automatically snaps shut into an exclusive smooth "Flo-Line" design with no protruding or recessed parts for the best in aerodynamic performance, quietness and safety. The IntegralNava2 is used in competition by more than 20,000 pro racers around the world for its high performance, ruggedness and lightweight comfort. Get your head into an IntegralNava2 at your favorite dealer today!



Leadership in Sports Protection



18210 Sherman Way, Reseda, CA 91335

MIC

You move out with the "Speed Control" visor in the open position.





lowers to vertical position, one inch from the helmet.

Broadsliding on pavement was OK, but one of his wheelies ended badly.

into a paved turn during practice, one of his shock bolts broke, highsiding him. An injured shoulder and ankle kept him off the track for the rest of the weekend.

The first round of heats was organized by the riders' primary form of competition. Freddie Spencer fell in the second turn of the roadracers' first heat ("They didn't say they'd watered the track!"), and David Aldana fell a couple of turns later. After Eddie Lawson parked, Dave Emde could coast home all by himself. Mike Kidd's big Triumph twin roared

to a win in the dirttrack/speedway heat, and Suzuki-mounted Kent Howerton, giving a preview of things to come, won the motocrossers' heat from Warren Reid.

In the final round of heats, young Reid, who was having his first ride with Team Kawasaki, battled his new teammate Jim Weinert and eventually zapped him on the pavement to win. Afterwards, he declared pavement racing "scary." Flattracker Scott Pearson won the next heat, and Winston Pro Series champion Steve Eklund, banished his engine problems to win the final heat. The two ablebodied world champs (Collins and Carlqvist) were sent directly to the main to face the 20 riders who had qualified in the heats.

Unfortunately, the two world champions had problems and were never in contention. Instead, the race was a tussle between three motocrossers-Reid, Weinert and Howerton. Reid took the early lead, then spent several laps trying to build a cushion on his Kawasaki teammate, Weinert. About the time he managed that, Howerton came up, elbowed past Weinert and put pressure on Reid. The youngster held off the 500cc National Champion for a few laps, but Howerton eventually forced his Suzuki to the front.

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SPOR'

Superbikers:

Reid kept the pressure on for several laps until a long slide on the pavement put him in the haybales. He got up to finish fifth behind Howerton and Weinert, Kawasaki-mounted Jeff Ward in third and Steve Eklund, who had hustled up to fourth to break the motocrossers' monopoly on the top finishing positions. Howerton, who collected \$11,000 for winning, has built a strong claim to being the best all-around motorcycle racer. He also won the first Olympiad back in 1977. However, he has yet to

face a strong challenge from all sides. Imagine if he'd had to face competition from Roberts, Jay Springsteen (home sick) and Bob Hannah (broken leg) in addition to this formidable field! That's what we're hoping for next year.

Superbikers Results

Kent Howerton, San Antonio, TX	Motocross
Jim Weinert, Laguna Beach, CA	Motocross
Jeff Ward, Mission Viejo, CA	
Steve Eklund, San Jose, CA	Dirt Track
Warren Reid, Westminster, CA	Motocross
Rick Hocking, Fremont, CA	
Steve Wise, Pharr, TX	Motocross
Dave Aldana, San Luis Obispo, CA	Roadrace
Alex Jorgensen, Stockton, CA	
Jeff Haney, Seaside, CA	Dirt Track
Danny Chandler, Foresthill, CA	Motocross
Mike Bell, Lakewood, CA	Motocross
John Hateley, Van Nuys, CA	Dirt Track
Larry Roeseler, Fontana, CA	Desert/Trials
Tony DiStefano, Laguna Hills, CA	



Flattrackers do it sideways: Rob Morrison's Norton shows the way to Danny Chandler's Maico and Jim Felice's TT500.

Factories Name Motocross Teams For New Season

Well, it's time once again to dispose of last year's posters and T-shirts embossed with your favorite motocrosser because chances are, many of them will be wearing the wrong team colors. Yep, with the motocross game getting more intense each year, so is the shuffling for top caliber riders. As of this date, here is the rundown of the major factory team riders for 1980.

Over in the Honda camp, they've literally swept the floor clean in favor of some young, talented blood-and one very distinguished "old timer." If you can believe it, Honda apparently had very little trouble wrestling The

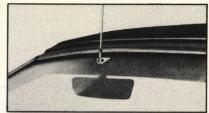
Man, Roger DeCoster, away from Suzuki's grip. No one right now is inclined to say what his exact job will be (he might manage the GP effort in Europe, possibly head up their R&D department, or possibly even don a pair of red leathers himself), but we're sure they have some very topsecret projects in store for him. Here in the States, Ron Sun (Chuck's brother) of Sherwood, Oregon, and Richard Clon of Ghent, New York, will be contesting the 125 Nationals. Steve Wise of Pharr, Texas will do a repeat performance in the 250 Nationals along with Donnie Hansen of Simi Valley, California. Jim Gibson of Orange, California, will be joined by former Husky rider Chuck Sun of Sherwood, Oregon, in an attempt to win back the 500 National championship from Suzuki. Graham Noyce will defend his 500 World Championship for Honda and will be backed up by Andre Malherbe. Gary Semics and

tennas

By Scott Larkin

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new long range antenna called the Moonfantom has been recently developed by Avanti one of the oldest and largest antenna companies in the world. The Moonfantom combines so many right things it's almost too good to be true.



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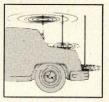


actually use less squelch (and get greater range) when using the Moonfantom because your antenna picks up less noise.

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minutes! There



are no holes to drill. No car body patching at resale time. Space age epoxy holds antenna to glass window with the strength of a 3/8" bolt. Can be easily removed at resale time.

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SPORT

Motocross Teams

Jimmy Ellis have been dropped, and reports have it that Ellis will be aboard a Yamaha sponsored by "TDQ," an accessory outfit based in the East. Marty Smith is a big question mark at this time. It's quite likely that his partnership with Honda will come to a close this year.

Suzuki's Team manager, Mark Blackwell, has Brian Myerscough and Danny LaPorte confirmed in the 125 and 500 class respectively, and Darrell Shultz and Kent Howerton are likely candidates for the 250 class. Suzuki hadn't yet decided whether Mark Barnett will contest the 125s or 250s. Akira Watanabe and Harry Everts will head up Suzuki's 125 GP effort and Gerard Rond and Jean Jacques Bruno (KTM mounted last year) will be aboard the big open classers. As with Kawasaki, Yamaha and Honda, most of Suzuki's Nation-

al riders will be berm-bashing in the Supercross Series. Jeff Jennings and Scott Gillman apparently didn't panout and were dropped from Suzuki's lineup.

Kawasaki has an impressive list of veterans, backed up with some upcoming talent. Bad Brad Lackey will take another stab at the World Championship. Jimmy Weinert-if you can believe it-will be going against the youngsters in the 125 Nationals along with Jeff Ward and Chappy Blose. Newly acquired Warren Reid and the top privateer of 1979 in the 250 class, Larry Wosick, are Kawasaki's 250 contenders while Gaylon Mosier will uphold the mean green in the 500 Nationals. Mickey Boone and Tommy Croft were bid a farewelltheir current whereabouts are un-

Yamaha's Team manager, Kenny Clark, wasn't about to tamper with success: he's going with basically the same power package as last year. Broc Glover is back for his fourth season in the 125 Nationals and will be joined by Don Cantaloupi. Former Honda gun, Marty Tripes, is merging with his good buddy, Mr. Marvel himself, Bob Hannah, to take on all comers in the 250 ranks. And Rick Burgett, Rex Staten and Mike Bell are going to be an awesome

threesome at the 500 Nationals. Yamaha's GP effort will consist of Jeff Nilsson (Sweden) and Marc Valkeneers (Belgium) in the 125s and Hakan Carlqvist (Sweden) and Andre Vromans (Belgium) in the 500s. Heikki Mikkola has stepped down from anactive position and is acting as team advisor.

Although Maico will sponsor Danny Chandler in the 250 Nationals and Supercross events, their main effort is aimed toward the World GPs. Gerrit Wolsink has reportedly signed a two-year contract to contest the 500 GPs, along with teammate Herbert Schmitz. Hans Maisch will fly the Maico banner in the 250s and the plight of Neil Hudson, who last year barnstormed his Maico to second overall in the 250 wars, is still questionable. It's rumored that Yamaha wanted him very badly, but Neil couldn't wiggle out from under his contract with Maico. Who knows where that battle will end.

Husky too is backing down their effort here in the States. They've signed Mike Guerra to campaign the 250 Nationals and Supercross events and had Tony DiStefano all primed for the 500 Nationals, but we were saddened to hear that Tony suffered a severe eye injury while working at his home and will miss most of the





Nationals. For the first time ever, Husky is making a bid in the 125 GPs in the form of Pauli Pippola of Finland. Eirki Sundstron (Finland) and Raymond Boven (Belgium) are 250 mounted and a Mr. Ovgard (we don't know his first name) will fly the Husky colors at 500 GPs.

Can-Am has declined to make a serious effort this year and will con-

centrate on giving limited support to several privateers. And, to this date, only Boo Stichter of Denver, Colorado, has a contract with KTM to ride the 250 Nationals. KTM will likely fund a larger effort, but none of it could be confirmed at this time.

So, there you have it. It will definitely be an interesting year. Will Honda's new clan provide any competition? Will Bob Hannah bounce right back from his broken leg? Will Tripes prove to be a thorn in Bob's side, now that both will be riding identical machinery? Who knows, but it appears from conversations here and there, that the emphasis this year will be on the Supercross series—that's seemingly where all the prestige and money lies right now.

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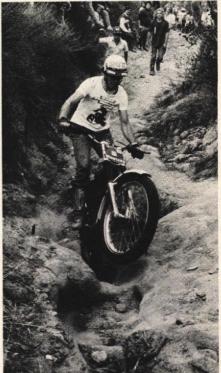
Trial De Espana **Comes Full Circle**

By Len Weed

The tenth annual El Trial de Espana dropped the curtain on a decade that saw America promoted from a tiddlywink trials power to the homeland of the world champion. The trial was conceived for the specific purpose of developing top caliber riders capable of challenging the world's best in international competition. So the initial American Trials Association organizers can pencil in a successful Mission Accomplished.

Appropriately enough, the winner of the tenth event was newly crowned World Champion Bernie Schreiber. It was his fifth straight triumph in the California classic.

The ETDE game plan uses raffle ticket proceeds to send top riders overseas for seasoning. Bultaco again donated a Sherpa T as first prize for the drawing. It was these raffle funds as well as entries from the trial that enabled Schreiber and Marland Whaley, who finished ninth



Montesa's Curt Comer underscored World Champion Bernie Schreiber by two points in the ultra-tough afternoon sections.

PHOTOGRAPHY: LEN WEED



Section three was so hard that there were only three threes in 240 attempts. Here even Bernie Schreiber collects a dab.

in the world in 1979, to fly overseas while still in their early teens.

Schreiber won the trial handily, dropping just 53 points. Runner-up Whaley lost 72. However third place finisher Curt Comer accomplished something that hadn't been done in several years. The Colorado rider underscored Schreiber in the afternoon spectator sections by two points. But Bernie's domination of the morning portion of the trial assured his win. He dropped just 12 points while Whaley accumulated 26 and Comer compiled a 38.

The trial format offered a two-part program. In the morning everybody rode. Nine different classes drew over 120 starters. The afternoon belonged to the Experts. They tackled five closely spaced spectator sections picked by Schreiber and clubmate Andre Plouffe, who earlier in the year got to ride the Spanish and French world rounds with El Trial de Espana funds. He returned home to win the ATA's No.1 plate. The duo's assignment was simple: come up with the most radical, straight-up, straight-down, crazy camber, fullthrottle tests to mind-blow the peanut gallery. In short, a guts-and-glory showcase. The twosome succeeded. As evidence, only eleven cleans were recorded out of 240 attempts. Comer posted four of them. Three of five exhibition tests remained unconquered. In fact, section three saw only three riders (Schreiber, Whaley and Comer) able to reach the exit.

High-schooler Scott Head took

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SPORT

Trial De Espana

fourth Expert, edging Plouffe by a single point. The two were announced as recipients of European trips based on their ATA rankings.

Two-time Colorado champion Bill Burgener took sixth ahead of ATA president-elect Matt Pritchard. Another traveler, Dan Suffin, edged Oli Thordarson for eighth. Rounding out the top ten was Bruce Davis, 1979 winner of the Jim Wilson Youth Award. This prize is annually present-

Donnie Cantaloupi Signs Big Buck Yamaha Contract

By Jim Gianatsis

Each season the National motocross circuit seems to come up with one new hot young hero who blasts his way out of the privateer ranks to become a member of a factory team for the following year. Usually though, after showing his worth in the Nationals, the new kid has to wait out the finish of the year and the Trans-USA Series before a vacancy comes up on the team that wants him. But this year was different. One youngster showed such startling potential that three major Japanese factory teams were clammering for his name on a contract before the Nationals were even over.

By the first of September 18-yearold Donnie Cantaloupi had decided to become a full-fledged factory rider with Team Yamaha, which won out in the back-room bidding. In the process he became the first new rookie to ever score a multi-year contract with a major team which included full salary, bonuses, expenses, a Toyota four-wheel drive pickup truck and . . . oh, yes . . . factory works bikes for the Supercross, Nationals and Trans-USA Series. Donnie's contract even included finishing out the 1979 season aboard injured Team Yamaha leader Bob Hannah's OW works bike in the Trans-USA Series with Hannah's personal mechanic wrenching.

ed to the outstanding rider under age seventeen.

After the trial Fred Belair, the prime mover in organizing the trial during the early 1970s, pointed out that El Trial de Espana had come full circle. At the first event he had presented Bernie with a youth award. At the tenth he was able to hand him the World Championship plaque. Back at that first trial Bernie was on a Bultaco Lobito, a diminutive preteen who couldn't touch his feet to the ground.

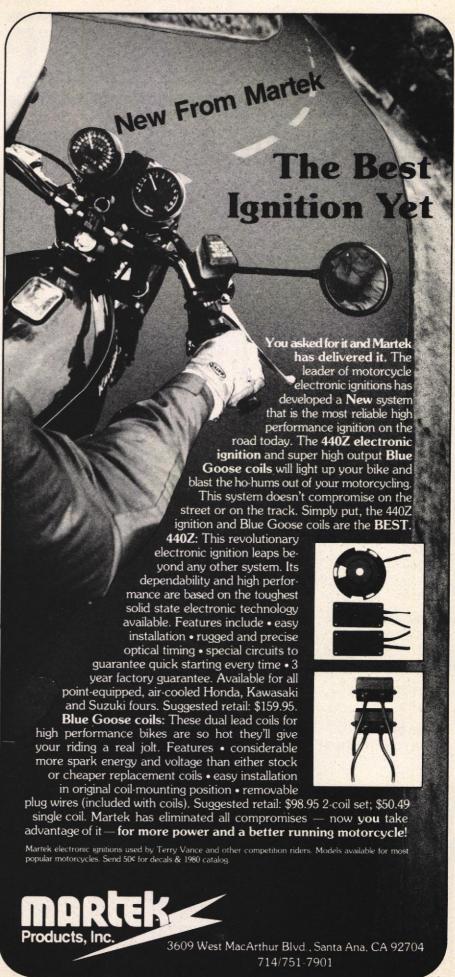
El Trial de Espana				
1.	Bernie Schreiber	Bul	53	
2.	Marland Whaley	Mon	72	
3.	Curt Comer	Mon	77	
4.	Scott Head	Bul	97	
5.	Andre Plouffe	Bul	98	
6.	Bill Burgener	Bul	102	
	Matt Pritchard			
8.	Dan Suffin	Bul	106	
9.	Oli Thordarson	Mon	107	
10.	Bruce Davis	Bul	122	



Chuck Tannlund prepared Donnie's blkes enroute to becoming the highest placing non-factory rider in the 1979 125 Nationals.

What had earned Donnie his seat at Team Yamaha were his outstanding rides throughout the 1979 season as a member of Team Moto-X Fox. Probably the top non-factory team in motocross today, Moto-X Fox is renown for giving unknown riders their first big chance in Pro motocross. Past alumni include Honda's Steve Wise and Suzuki's Mark Barnett.

Donnie raced the AMA 125cc Nationals this past year aboard a production Yamaha YZ-125F which was prepared by Fox team manager Chuck Tannlund and modified with Fox suspension components to make the bike competitive against the factory machines. Donnie and the bike compiled up a perfect finishing record in the Nationals, turning in consistently strong rides at each race where Donnie proved to be the only non-factory rider dicing it out with the factory boys each week. He finished out the 125cc Nationals in fifth place overall, behind Yamaha's Glover, Suzuki's Barnett and Myerscough and Honda's Reid. Other impressive





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Donnie Cantaloupi

rides by Donnie during the year included second overall in the 250cc Support Class of the Carlsbad GP behind Suzuki's Barnett and a very close second behind Suzuki's Myerscough in the CMC Golden State Series at the beginning of the year.

Stockton, California, is Donnie's home and where he first began racing at the age of 13 in the minibike class. His father was an experienced enduro rider, but couldn't afford the bikes and equipment for Donnie to become a full-time racer. That's when Donnie's grandfather came in to help, buying the bikes, tuning for him and taking him to the races. That first year Donnie became so hot that he won 30 races in a row at one point, along with the Western Regional Minicycle Championships on a 100cc Steen.

The following year at age 14 Donnie switched to big bikes and wanted to race Pro, but a knee injury kept him out of motocross for a while and he had to stick with less strenuous scrambles racing. By age 16 he was

back into motocross and had picked up his AMA Pro license. Right away he began beating the top local riders and even some of the better-known factory riders when they came up from Los Angeles to cherry-pick at big-money local races. The 1978 National at Hangtown saw Donnie placing seventh in the 125cc class which attracted the attention of both Yamaha and Moto-X Fox. While Yamaha put him on their local support program which included bikes and parts, Moto-X Fox kept him supplied with riding gear and performance goodies. Donnie finished out the 1978 season with the District 36 No. 1 plate in the 125cc class.

For the 1980 season with Team Yamaha, Donnie will be matched up with three-time 125cc National Champion Broc Glover. He isn't sure yet if he can beat Broc, but he does know he will be giving his new teammate a hard time. What "Loop Out" is really looking forward to is the indoor Supercross Series since the 250cc class is really his favorite and the stadium tracks remind him a lot of the nighttime-lighted scrambles tracks he used to win on back home.

The nickname "Loop Out" for Donnie is actually a shortened derivative of his last name, Cantaloupi, which actually sounds like "Can He Loop Out?" All Donnie's friends used to call him "Can He Loop Out" until one day at a local race Donnie finally did loop his bike. From that point on everyone just started calling him "Loop Out."



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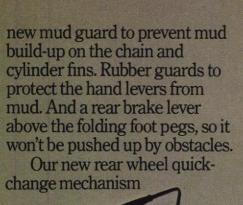
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A Shaky Beginning For The World Series

By Joe Scalzo

Just when it appeared that the bullying Federation Internationale Motocycliste had its rebellious World Champions Kenny Roberts and Barry Sheene reeling on the ropes and their rival World Series program (Motorcyclist, January) about knocked out, Roberts and Sheene counterattacked and at a noisy, emotional, and grueling press conference in London announced a schedule of eight World Series races on the circuits of seven countries, including America (at Laguna Seca on August 3). The conference caught European racing somewhat by surprise. After Roberts and Sheene had let September. October and November go by without announcing which if any worldwide tracks would buck the FIM by issuing them race dates, it had been widely assumed that Roberts and Sheene were bluffing, that in fact they had no dates, and that their ambitious series was stillborn. Earlier, the World Series had lost one of its most valued members-the flamboyant Johnny Cecotto-when the Venezuelan World Champion experienced a change of heart and decided to remain loyal to the FIM after all. On the heels of the Cecotto defection had come an FIM announcement that the Honda, Kawasaki, Suzuki and Yamaha factory teams would force their employees Ballington, Ferrari, Hartog and others (all of whom are among the 42 contracted World Series members) to race in FIM Grands Prix and not World Series events. And to make those GPs more financially rewarding, the FIM, after decades of penury, magnanimously decided to increase prize and starting monies by as much as 50 percent.

Used to being catered to and even idolized by the European newspaper and magazine press, Roberts and Sheene-the first two riders to seriously fight the FIM after generations of others have put up with deplorable racing conditions in stoic, shameful silence-received harsh treatment at

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SPORT

The World Series

their London conference. The assembled writers and editors subjected the Californian and the Cockney to a grilling which lasted for two hours. And the questions that were asked generally were better than the answers Roberts and Sheene gave. Where, for instance, was the promised sponsor who was going to underwrite the expenses of the eight World Series races, races that are to pay \$200,000 prize money apiece? The answer that there was none-yet-but that Roberts was pledging half-a-million dollars of his personal income to the series impressed the conference audience but was judged no guarantee that the series could financially work. And when

the answer to the tricky question of what would be done to any World Series riders who broke away from the group and returned to the FIM came-"We'll take them to court"mutterings were heard that this smacked of the very authoritarianism that Roberts and Sheene have complained about in the FIM. Sheene did a superior job of staying cool while answering the pointed questions than Roberts; losing his temper, Roberts shouted that the World Series was going to succeed, and that was that. And he repeated his often-heard vow of never, ever, competing in an FIM World Championship again.

Things worsened for Roberts and Sheene in the days that followed; few of the tracks on the World Series schedule would give positive assurances that the announced races would be held (Laguna Seca said that the August 3 date "probably" would occur). Holland's Zandvoort circuit said that before it would sign a World Series contract it wanted \$35,000 for promotional expenses. And the Dutch FIM representatives said they had already gone to the copyright courts to prevent the term

Honda's Pro-Link Offers The Latest In Rear Suspension

By Jim Gianatsis

Contributor Jim Gianatsis has scared up a few more scraps of information about the exotic Honda seen at the Anaheim Supercross late last year. Appetites whetted by the two photos and short description in last month's Hotlap column should be satisfied more fully by Jim's research.—Ed.

Just after Team Honda's debut of an all-new RC400 works motocrosser with variable leverage ratio suspension (VLRS) for the rear wheel during the recent Trans-USA Series, Honda has now taken another giant step with the introduction of an all-new works bike for the Eighties. The machine is a new from the ground up RC250 with water-cooling and a monoshock rear suspension system incorporating VLRS.

Where Honda's Trans-USA VLRS bike relied upon conventional shock absorbers attached to the bike's



In the Honda Pro-Link's first race at the Anaheim Supercross, rider Steve Wise served notice by winning his qualifying heat and placing fifth overall in the final moto.

HOTOGRAPHY: JIM GIANATSIS



"World Series" from being used in connection with the Zandvoort race.

A lot more eye-gouging and groinkicking is bound to occur between now and what Roberts and Sheene said will be the World Series' kick-off race at Imola, Italy, April 13. The analogy with street fighting is apt, because Roberts and Sheene are learning that even though the FIM is better than 70 years old it can fight back vigorously, without quarter or scruple. To the few neutral observers in the European press (not only is the press heavily biased in favor of the FIM, but Roberts was puzzled and annoyed that many of the sharpest questions he was asked at his now-famous conference came from

journalists who had been highly supportive of the World Series when he had initially told them about it), it seems apparent that the only hope Roberts and Sheene have of preserving their noble but perhaps naive idea of running races for riders and arranged by riders is solidarity. The riders have to remain united. The series will collapse before it can begin if other World Series members follow the path of the out-of-favor Cecotto and return to the FIM. Clearly this is what the FIM is counting on, and why its raising of prize and starting monies to the point where it will now take the average Grand Prix rider a little longer to starve was such a cynical one: It was done not to benefit the riders, but to destroy the plans of Roberts and Sheene.

World Series Schedules		
April 13	Imola, Italy	
	Donnington Park, England	
TBA	Zolder, Belgium	
August 3	Laguna Seca, California	
August 31	Le Mans, France	
Sept. 7	Monza, Italy	
Sept. 14	Zandvoort, Holland	
Sept. 28	Salsberg, Austria	



At Anaheim Wise's bike ran with a water temp gauge clamped to the frame. One rumor said the bike weighed only 206 pounds.

swingarm by way of two small bellcrank rockers, Honda's now newer monoshock system, named Pro-Link, looks somewhat similar to Kawasaki's Uni-Trak rear suspension. But Honda's Pro-Link has a few advantages over the Kawasaki design. Notable among them is Honda's locating of the bellcrank system inside the swingarm which helps to lower the bike's center of gravity. Honda's Pro-Link is also quickly adjustable for amount of rear wheel travel and spring preload. And



The Pro-Link's adjustable bell-crank arm bolts to a cross member under the engine.



Honda's new RC250 is designed specifically for water cooling with a complex pipe and hose system going to the radiator.

of course there are the main advantages of any monoshock system which include less unsprung weight and a more centered bike mass for less polar moment of inertia-resulting in quicker handling. The advantages of the VLRS system remain: a suspension which is softer when the rear wheel is extended for the smaller bumps usually encountered in such a position, then becoming progressively firmer in damping and spring rate as the suspension is further compressed for larger bumps.

Honda is also the first major manufacturer to use watercooling on a 250cc motocross bike. Their reasoning for it is unknown at present since power loss due to heat has never been a major problem on 250cc class bikes, while the complexity of the system and reliability could be. Honda's watercooling system is quite unique though, in that it uses twin crankshaft driven waterpumps.



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HOTLAP

HANNAH'S FUTURE IS UNCERTAIN

Just before Christmas Bob Hannah underwent surgery on his broken leg because it "wasn't healing properly." This unexpected turn of events came about a month after doctors removed the last remnants of the thigh-to-toe cast that had imprisoned the motocrosser's right lea since its celebrated water-skiing fracture of last summer. Hannah had been training with isometrics and punching bags while still in plaster, and shortly after the cast's removal had gone hunting in the desolate Mojave mountains, where he was able to run at what he calls an "Indian-trot" across the desert, though he favored the injured leg. Shortly thereafter he began using a cane and subsequently went back into surgery. Doctors originally had predicted a routine healing that wouldn't effect the star's ability to ride motocross, but now his fate is uncertain.

HONDA GRABS FREDDIE

Pavement sensation Freddie Spencer will head American Honda's newly formed roadracing squad which will contest AMA Superbike events on big-bore CB750Fs. Honda is also reportedly readying 1000cc fours for the new AMA GP class which will permit 1000cc fourstrokes to compete against 750cc two-strokes. Teenager Spencer, who attracted national attention racing 250s and then lept to stardom in the Superbike class in 1979, will be joined by Steve McLaughlin and the 1979 Daytona Superbike winner, Ron Pierce.

KAWASAKI NAMES ENDURO TEAM

Jack Penton, team manager and rider for Kawasaki's assault on the National enduro schedule, has named the other four members of the five-man effort: Kevin LaVoie, a Six Day veteran from Rhode Island; Jeff Hill, an experienced ISDT man from Georgia; Mark Hyde, a 19-year-old motorcycle mechanic from Ohio who Penton calls a "woods riding rocket;" and Ted Leimbach, another Gold Medalist from Penton country in Ohio. Jack Penton's new business, True-Sport Development Company of Lorain, Ohio, was contracted by Team Green to prepare bikes and ride both enduros and two-day reliability trials with an obvious eye on fielding a 1980 Six Day team in France. Assisting the effort as chief mechanic will be Ted's brother, Dane Leimbach, himself a former Gold Medalist. The team will be riding KDX400s and 175s, and modified KX250s.



FOX ANNOUNCES MOTOCROSS TEAM

Three young riders will receive full support as part of the Moto-X Fox 1980 race team. Left to right in the photo are Jeff Watts, 125 Yamaha; Lenny Giger, 250 Honda; and Dana Waxham, 125 Yamaha. Both Watts and Waxham are top Northern California riders while Giger is from Las Vegas and was the winner of last year's big SCORE Riverside off-road race. Previous Fox team riders who have gone on to earn factory sponsorships include Honda's Steve Wise, Suzuki's Mark Barnett, Yamaha's Donnie Cantaloupi and Kawasaki's Larry Wosick.

REGIONAL MX GETS \$100,000 FUND

Kawasaki, Suzuki, Yamaha and Honda have each donated \$25,000 as a support program for the AMA Regional Motocross Championship Series. The Regionals' schedule is expected to include 24-30 races offering purses of \$3000 each. Riders will earn points toward regional championships and top finishers will earn "qualifier points" which serve to grade the riders for possible acceptance in National competition.

WHY MIKKOLA RETIRED

Early last spring the winner of four World Championships and 11 Finnish National Championships injured his knee. Though it healed, Heikki didn't have the strength to follow the rigorous training schedule of consecutive riding days he pursued. So at the third round of the 500 GP series last year, after finishing second and third in the day's motos, he announced his retire-

ment, effective at season's end. In the following round, in Italy, he won both heats and repeated the double victory later in Switzerland. He was the only man all season to win both motos at a single GP round. But he still retired. Now, at 34, he's a team manager and R&D development rider for Yamaha in Europe.

VESTERINEN DROPPED

Three-time world trials champion Yrjo Vesterinen has been dropped by Bultaco for whom he won his three titles. Vesterinen lost the title to Bultaco teammate Bernie Schreiber in 1979 and the financially ailing Spanish firm reportedly couldn't afford to renew Vesterinen's contract. He's expected to sign with Montesa.



DECOSTER GETS THUMPERIZED

You're probably aware by now that Roger DeCoster has made the big move to the Honda camp. One unconfirmed bit of gossip suggests that Honda hired him because they are very interested in developing a competitive four-stroke for GP competition. To give The Man a little inspirational incentive, Honda Team mechanic Dave Arnold built Roger his own personalized XR thumper for a recent trip down the Baja peninsula. The bike was tricked-out to the max with a C&J frame, Ohlins piggyback shocks, very works-ish forks, lots of titanium nuts and bolts and a very healthy powerplant. He seemed quite pleased with the package even though he said it was still a little too heavy.

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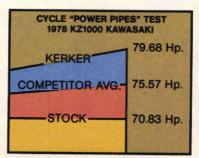
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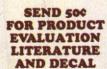
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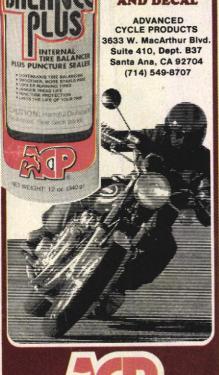
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SUZUKI VS. CBX continued from page 88

concluded with a ride down Van Nuys Boulevard, L.A.'s prime profiling strip. Both bikes got a lot of attention. The GS1100 drew enthusiasts, who already knew it by reputation. But, even though the CBX has been around for two years, it usually drew the most attention. The uninitiated would look at the GS1100 and apparently see just another Japanese Four. On several occasions we pulled the GS1100 up at lights next to other riders, even riders of other big Suzukis, and got no reaction after they glanced at the bike. Nothing registered. But no one ever ignored or overlooked the CBX. The eye can't miss that huge engine with all those pipes and cylinders, and the CBX's quick-revving six-cylinder engine sounds unique. Even after two years, the Six still draws plenty of attention because of its unmistakable mechanical presence. Even uninitiated onlookers can't ignore that. The Suzuki relies on a budding performance reputation to turn heads, but that apparently doesn't work as well as mechanical pulchritude.

.... And on the seventh day we put our heads together, compiled our notes, examined figures and started writing. Actually the riding and testing went on for about three weeks as we continued to monitor fuel consumption and reliability and double-check details of our findings.

Surprisingly, no one felt any passionate desire to own either of these motorcycles. It wasn't that we were put off by any performance overkill, because all that power is very appealing to us. With a twist of the wrist, you can see an honest 130 mph. Or you can leave every stoplight in a cloud of rubber smoke. You want to wheelie? No problem. These superbikes can do all sorts of thrilling stuff without breathing hard and that's fun where we come from.

We weren't bothered by the complexity either, since many people look to technical trickery as much as sexy styling to make a statement about the bike. All those valves and cylinders would make an impression, even if they didn't do anything that simpler layouts couldn't do.

However, there's more to life than black streaks of burnt rubber and flashy ego-inflating rides. We were disappointed about the variety of niggling problems on the Suzuki and its vibration. Likewise the CBX's taut ride and not-so-taut handling were disappointments. We loved the CBX's engine, its feel and sound. We generally enjoyed the GS1100's handling and we were awed by the enormous power of this new beast from Hamamatsu. Still, we regretted that both bikes had drawbacks that you couldn't ignore.

If you must have one of these pavement-wrinklers, which one do you buy? Well, if straight-line tiresmoking performance is your only criteria, the GS1100 is your only choice. It is the fastest, meanest boulevard-burner ever. However, if you just want a superbike to turn heads, the CBX will probably do a better job with that big, wide, eyegrabbing engine and the prestige of six cylinders-and don't forget that Porsche-like sound. If touring is primary objective, there are a handful of better choices than either of these, although the GS1100 is more comfortable, torquey and economical than the CBX. The GS1100 has an edge-but not a big one-on winding

Five staffers rode the bikes, and three voiced slight preference for the CBX. One chose the GS1100 and one was undecided. Neither bike fulfilled the requirements for our fantasy superbike, a bike which could fly at the dragstrip, glide on the interstates, cavort in the canyons and make eyeballs bulge on the boulevards—all with equal aplomb. We're still waiting for that perfect superbike... the one that runs 11 seconds flat at 125 mph, that has a smooth, stylish engine in a comfortable, stable chassis, one that gets 55 mpg and ...

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